AMERICAN RAILROAD JOURNAL,

AND

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PUBLISHED AT 48 S. THIRD ST., PHILADELPHIA.

Saturday, December, 2, 1848.

Worcester and Nashua Road.

☞ The Worcester and Nashua road will soon be opened to the junction with the Fitchburg road, and the extension to Nashua will be completed by the 1st of January. There will then be a direct railroad connection between Allyn's Point and Portland, which will enable the trade of the New England States to reach New York without passing via Boston. This line effects a connection between the Norwich and Worcester and the Fitchburg, the Concord, the Cheshire, the Vermont and Massachusetts, Boston and Lowell, Maine—and indeed the whole net work of New England roads: making a large area of country tributary to New York, the trade of which has formerly centered at Boston.

Disappearance of Stage Coaches.

The Lincolnshire Chronicle, speaking of the *Tally Ho* coach, says—"This coach, so long known on the road between Lincoln and Stamford, is we hear to cease running on Saturday next; and as the Gt. Northern loop line, and the Grimsby and Lincoln line, will be opened in a short time, we much doubt whether we shall have a single coach out of Lincoln a few weeks hence."

The same journal says—"On Friday last the first locomotive engine and railway carriages made their appearance at Brigg, to convey the Earl and Countess of Yarborough to New Holland, which distance was accomplished in half an hour. Since then the engine has been up and down several times, but the line is not yet opened to the public. It is rumoured that the opening will take place at the beginning of next month."

Gutta Percha Tubes.

The London Mining Journal says that "this novel material, so famed for its utility, has lately risen to an extraordinary elevation in the metropolis, having reached even to the top of the monument, from whence visiters to that noted column may look upon a gutta percha tube 190 feet in length, 3 inches in diameter, and ¼ inch thick. This tube passes up the centre of the monument from its base to the gallery, at which point it is upheld by a flange, also made of gutta percha. It is intended for the conveyance of water, and is, we understand, highly approved by the civic authorities, being light in weight and economic in price. The above adaptation of gutta percha affords another striking instance of its very general applicability."

Rider's Iron Bridge.

☞ We wish to call the attention of our readers to the advertisement of "Rider's Patent Iron Bridge" which appears in this number of the Journal.

There is, perhaps, no department of railroad engineering, which requires, and is so susceptible of improvement, as the construction of bridges, and if the invention of Mr. Rider meets the exigency—as we have reason to believe it does—it should be universally adopted on all our great lines of railroad.

True economy demands that bridges, so expensive in their structure, should be composed of more durable material than wood, which, under the most favorable circumstances, decays in a short period, requiring in all cases repairs within the first ten years—and entire renewal in fifteen or, at most, twenty years. Few travellers cross a wooden railroad bridge after the lapse of a few years from the date of its erection, without a certain feeling of insecurity, arising from a knowledge of the liability of its materials to, and the difficulty of detecting the approaches of, decay—often so insiduous, and deep-seated, as to elude the vigilance of the most skilful workman.

From an examination of the cut of Mr. Rider's bridge, engineers will discover that the invention is based upon scientific principles, and that the combination of the trusses is such as to throw the weight of the passing body almost exclusively in the longitudinal direction of the wrought iron tension bars, thereby securing a power of endurance, such as iron alone can give, and which in practice is found to be more than equal to any emergency which the heaviest trains can subject them to. Where these bridges are now in daily use, we have observed that they appear to possess almost the solidity of *terra firma*; no sensible depression can be detected by the most vigilant observer during the passage of the trains. In the construction of them the utmost pains is taken, we are informed, to use only the *best* materials, without regard to cost, and in the process of filling the parts, every bar of iron is subjected to a proof, and made to endure a strain, much greater than can ever be legitimately imposed upon them when occupying their place in a finished bridge. But it is not for strength only that these bars should be adopted; if kept covered with a coat of coal tar—the *cheapest* article that can be used—time can exercise no influence upon them, or if any, so little that the lapse of a century would leave no marks of decay—while their total exemption from accident by *fire*, adds immeasurably to their value. The risk of fire caused by the passage of locomotives over wooden bridges, is always imminent, often requiring in expensive structures, the employment of a watchman, night and day, to guard against this disaster, which should it occur at some points would involve a loss of income (beyond any insurance that could be effected) and on some roads even greater than the cost of an iron bridge at the same point.

We have already extended these general remarks so far, that we must say less of particulars than we had intended.

The company furnishing these bridges are practiced and careful men, determined that every step taken shall be justified by previous experience; this it is which has hitherto restrained them, in most cases, from extending the span much beyond a hundred feet—though a bridge is just now completed at Buffalo of 160 feet, which will be tested during the present week, and which they doubt not will prove in all respects satisfactory, and authorise the building of longer spans, till finally they reach 300 feet—a limit which they deem entirely feasible.

The cost of these bridges is so low, that when their advantages come to be considered, and properly appreciated, we can hardly doubt of their almost universal adoption. This cost will of course be varied in reference to locality, and the peculiar obstacles to be encountered at the point of erection, but as a general rule it may be stated that an indestructable iron bridge of 100 feet in length may be completed for considerably *less* than double the cost of a frail and perishable wooden one.

In order that our readers may fully understand the views of the company—owners of the patent, and builders of these bridges—we give, in this number, the contents of a small pampelet, with an engraving of a bridge of 150 feet span, designed for railroad trains, which we have received, and ask the attention of those interested in such matters, as we are sure that *true economy* to railroad companies will be promoted by a general introduction of this plan of bridge.

Morse's Claims to the Telegraph.

We copied into our last number a few pithy remarks bearing upon this subject, from the pen of the editor of the New York Observer. In looking over the "Pathfinder," of last week, our eye rested upon the following, which we insert for the benefit of all concerned.

"*Morse's Claims.*—Although the telegraph controversy, going on between Morse, House and Bain, has been made the subject of judicial proceeding in Kentucky, and more latterly at the patent office, and the claim of Morse to priority of invention has been partially substantiated by the authorities appealed to, yet the matter at issue between the respective parties is far from being settled, either to the satisfaction of those immediately interested, or to the public at large. In the declaration filed by Morse, he assumes to be the first discoverer of the principle of transmitting intelligence between distant points, by means of electricity produced from electro-magnets, and conveyed by wires connected to certain apparatus at each terminus, in such a manner as to form corresponding hieroglyphic characters at each station by operating the apparatus at either, and prays to be protected by law against infringement on his alledged exclusive right: or in other words desires an injunction, which shall prevent House and Bain, and all others, from using this principle without his consent—and thus render their improvements useless, and them at his mercy. On the other hand, House and Bain deny Morse's claim to originality of invention in the particular stated, and aver that no one can by law claim the application of a known principle to this purpose, even if he were the first to make it; and Bain, in a letter published in the National Intelligencer, in reference to the late decision of the commissioner of patents, and the attorney general of the U. States, on the case, states:

"'A patent is now passing through the several stages of the patent office, and I expect to receive it in a few days, for my original electro-chemical telegraph, which transmits and records the signs with great rapidity, by a single telegraphic circuit, entirely without secondary circuits, and the cumbrous apparatus to them.

"'It is true that Mr. Morse lays claim to such an invention, and his allegations date in September, 1846. But Mr. Morse was in London, as I am informed, in 1845, and the specification of my invention, dated 27th November, 1843, was open to him, as to any one else, who would pay one shilling sterling to see it.

"'By this the public will see that I anti-date Mr. Morse three years and a half, as my patent was issued in London the 27th May, 1843, previous to the above specification of it; while Mr. Morse's caveat only was entered in January, 1847, and his application for a patent was dated January, 1848, four years and seven months *after* the issue of my English patent.'

It would appear, from this statement of Bain, in the opinion of the *Pathfinder*, that "the decision of the attorney general and commissioner of patents, was not against his claim, as was stated by the press generally; but on the contrary, judging from the satisfactory tone of his letter and the absence of complaint on his part, as favorable as he desired. It is not probable, however, that the parties interested will yield their claims to an invention so important without carrying it to the highest tribunal of our land, the supreme court, when we trust the question at issue will be finally and satisfactorily settled, both to the claimants and the public."

[From the Philadelphia "Commercial List."]

Pennsylvania Coal Trade for 1848.

From the Lehigh Mines.

The amount of coal shipped from the Lehigh mines during the week ending the 18th ult., and since the opening of the navigation, has been as follows:

	This week. tons.	Total this year—tons.
By Lehigh company, Nov. 21	3,099 15.	212,168 03
By Room Run ..... "	3,302 14.	117,984 00
By Hazleton.....	2,097 00..	85,548 00
By Beaver Meadow.....	2,196 03..	81,228 11
By Buck Mountain.....	1,327 18..	70,162 00
By Spring Mountain.....	2,046 03..	61,969 00
By Cranberry Mines.....	1,596 00..	17,031 00
White Haven.....	383 06..	10,356 11
Diamond Co.....	428 18..	6,073 07
Total.....	17,477 17.	602,517 12

From the Schuylkill Mines.

The amount of coal forwarded by Reading railroad during the week ending the 23d ult., and since the 1st of January, has been as follows—

	Tons.
From Schuylkill Haven.....	7,675 00
" Pottsville.....	3,844 16
" Port Carbon.....	6,225 02
" Port Clinton.....	2,418 09
Total this week.....	19,163 07
Total this year.....	1,139,046 07

The amount of coal brought to market by the Schuylkill canal during the week ending the 23d ult., and since the opening of the canal, has been as follows:—

	Tons.
From Pottsville and Port Carbon.....	5,301 17
" Schuylkill Haven.....	3,025 11
" Port Clinton.....	778 01
Total this week.....	9,105 09
Total this year.....	420,424 04

Recapitulation.—Total Shipments this Season.

By Lehigh companies.....	662,517 12
By Reading railroad.....	1,139,146 07
By Schuylkill canal.....	420,424 04
Total.....	2,222,088 03

Troy and Greenbush Railroad.

In pursuance of a resolution of the Assembly, passed February 3, 1843, the Troy and Greenbush railroad association respectfully submit the following report:

The Troy and Greenbush railroad, extending from the city of Troy to Greenbush, opposite the city of Albany, is 6 miles long.

The amount paid on construction of road to January 1, 1848.....	$270,827 28
Received from 198,152 passengers.....	36,366 74
" freight.....	26,784 59
" other sources.....	677 73
Expended for repairing and running the road.....	42,756 03
Expended on construction of road in '47	19,414 53
Dividends, none.	
Number of locomotives.....	3
passenger cars, eight wheel.....	3
freight cars, double, equal to single cars.....	19
machine shops.....	1
horses.....	2
Average number of men per day in the employ of the company for the year.....	70
Number of miles run by passenger trains....	47,628
freight "	3,816
other "	3,000
Total number of miles run in 1847.....	54,444

N. Stratton, Accountant.

Albany and West Stockbridge Railroad.

The directors of the Albany and West Stockbridge railroad company submit the following report for the year ending 31st Dec., 1847:

The length of road in operation under the lease to the Western railroad corporation, 38¼ miles.

Cost of construction to Dec. 31, 1847,	$1,789,808 76
Number of through passengers.....	106,369¼
" way "	30,077
The expenses of the road repairs, including the repairs of building ferry boat and docks in the city of Albany.....	$44,234 07

No locomotives or cars of any description are owned by the company.

No men or horses have been employed by the company.

One machine shop at Greenbush is owned by the company.

The number of miles run by the passenger trains of the lessees.....	54,786
The number of miles run by freight trains of the lessees.....	145,205
Number of miles run by all other trains....	24,417
There is no income; the lessees pay the interest on the bonds of the city of Albany, which amount as rent, to.....	$100,000

M. T. Reynolds, President, etc.

Northern (N. H.) Railroad.

Third Annual Report, May, 1848.

Although this is the third annual report made by this company, yet it is the *first* we have seen—therefore it is new to us, and may be new to many of our readers. This road is, as is well known to our readers, a *continuation* of the Boston and Lowell, the Nashua, and the Concord, N. H., roads, to the Vermont line, where it connects, at the mouth of White river, with the Vermont Central road, to Burlington, and thence another road to Rouse's Pt., 38 miles, where it is to cross the outlet of lake Champlain, and connect with the Ogdensburgh, or Northern, N. Y., railroad, of 117 miles, making the distance from Boston to Ogdensburgh *four hundred* miles.

This road, like the Central Vermont road, occupies an exceedingly favorable position, being one of the two lines which must pass the immense trade between Boston and the lakes, and of the upper valley of the Connecticut river, and it will yield to its stockholders rich returns upon its cost, even though its construction, from the character of the country, has been very expensive.

It has been constructed in the most substantial manner, as we are informed, and furnished with an outfit equal to present demands; and has thus far more than realised the expectations of its most sanguine friends. Its day of prosperity has not yet *dawned*. The completion of the Vermont Central, the Ogdensburgh, and the Passumpsic river road and their branches and connections, will bring to it an amount of business not, even *now*, dreamed of by the many who look upon it with *inexperienced* eyes.

We have not yet passed over it, and cannot therefore speak from observation, but have reason to believe it a well constructed and a well managed road.

The following report, to which we ask attention, will show its cost and performance to date.

REPORT.

To the Stockholders of the Northern Railroad:

The fourth article of the By-laws of our corporation requires the board of directors for the time being to make an annual report of their acts and doings, their receipts and expenditures, and the condition and prospects of our road.

In compliance with this regulation we now submit our third annual report, embracing

an exposition of our affairs up to the 1st day of May, 1848.

At the time of our last report the Concord railroad were running our road as far as Franklin. By virtue of their contract with us, we had the net income, after paying them the actual expense of running the road. This contract continued to exist until the first day of last September, when we opened our road for public use to the town of Grafton, and then put our own men and furniture upon the road, and commenced operating the same upon our own account. On Wednesday, the 17th day of November last, we ran passenger cars for the first time to Lebanon, Centre village. Since that time our trains have run daily, to and from that village, being a distance of 64 miles, without serious interruption.

With pleasure we state the fact, that our road is graded, and the track laid, for the whole distance to the mouth of White river, in Vermont. Our bridge over Connecticut river, constructed by Mr. Campbell in a very substantial manner, is now ready for use.—We now contemplate running two passenger trains, and one freight train, daily over our road.

Some more labor and expense must necessarily be bestowed on some of our deep cuts, in giving them the proper slope; in the erection of suitable bank walls, pass ways, culverts and ditches: in providing defences about some of our embankments, and in fortifying some of our bridges, and their abutments and piers, against the action of water.

These improvements are now being made, and when completed we shall then claim that our road is as well made, and secures the public as well, as any other road in the U. States.

The buildings necessary for the accommodation of our road are all finished except at West Lebanon. They are generally built in the best and most thorough manner, both as regards convenience and durability. Our engine house at Concord is 126 feet in diameter. The one in progress at W. Lebanon is 130 feet in diameter. Each is to accommodate 16 locomotives, and to have turning tables of the diameter of 40 feet in their centre. Our repair shop at Concord is 180 feet in length, by 50 feet in width, with a basement story and loft over head, well equipped with the best quality of tools and machinery, sufficient for the construction and repair of engines and cars required for the road. It is the intention to do our principal repairs at Concord at present. We are, however, erecting a repair shop at West Lebanon, 80 feet by 50, where such a portion of our work may hereafter be done as our convenience may require. We have also an engine house at Franklin, erected to hold five engines, with a good turntable in it. This is necessary for the supply and change of motive power, where our higher grades commence. Also similar accommodations near the summit, to enable us to keep engines to send in either direction in case of deep snows.

We have been at considerable expense in providing our road with a plentiful supply of good water, drawn from ten different fountains or springs, at the average distance of about eight miles from each other. The water from each fountain freely flows into our cisterns, so that we have no occasion to resort to pumping to procure this necessary element of steam power.

Our motive power now consists of 10 first class engines, and 1 second class: 5 of them passenger engines of 16 tons each, and eight wheels; 4 freight engines of 10 tons, each 8 wheels; 1 freight engine of 24 tons, and 10 wheels: 1 second class engine of 11 tons, 6 wheels; 11 passenger cars, with 64 seats: 5 eight wheel baggage cars; 2 four wheel do.; 47 gravel and stone cars; 29 hand cars; 121 eight wheel merchandise cars; 67 four wheel do.; 8 snow ploughs.

Our land damages are now nearly all adjusted. Since our last report a few balances remaining unpaid were deposited with the State treasurer, and a lease of our road for the term of 200 years, executed by the chief executive officer of the State, has been procured and placed in our archives.

This has been done in order to give us a title to our road, and in pursuance to the statute law of New Hampshire.

In relation to our financial affairs, we would state, that within the past year we laid two assessments upon the old stock of our corporation, which have been paid. Our treasurer has also sold the 3293 shares of the new stock, created Nov. 18, 1846, which had not been taken or disposed of at the time of our last report. This was sold at or about par, and the proceeds paid into the treasury. On the 7th day of October last, the directors, finding that two millions would not be sufficient to complete and equip the road, voted to increase our capital stock, by the farther addition of $400,000, or 4000 shares. This was duly offered to the stockholders, and about $70,000 taken by them at par. Our treasury requiring the money, and the pressure in the money market becoming severe, and there being no hope of immediate relief, for these and other reasons we concluded to make a prorata distribution of 3000 shares of the stock, to such stockholders as held stock on the first day of January last, at $90 per share.

We were well aware that this stock could not have been sold at that time, either at auction or at private sale, without a sacrifice.—We placed it at such a price as to command the money. The stockholders very generally shared the benefit of our discount, and have thus realised a gain to the extent of our loss. And the corporation have thus avoided a temporary or permanent debt. On the 22d of April last, the directors, to meet the liabilities of the corporation, voted to add the farther sum of $200,000 to its capital stock, and that the same be offered at par to such as were stockholders on the first day of May, until the first day of June next.

When this amount is paid in, our capital stock will amount to $2,600,000. The present claims against us, as well as those that may reasonable be anticipated, give us the assurance that it will require about this am't of stock to complete and furnish our road.

The stockholders are aware that on the 20th of January last we paid them interest at the rate of 6 per cent., upon all payments made by them prior to January 1, 1848.—We have voted to pay the same rate of interest on the first day of June next to stockholders, upon all payments made by them prior to the first day of May current.

From and after the first day of the present month, dividends of the net earnings of the road will be paid semi annually, agreeably to the by laws of the corporation. We made no dividends of profits at an earlier period, because we thought the spirit of our charter required the whole road to be open for public use, before we commenced distributing its earnings.

By our treasurer's statement, it will appear that the interest paid to stockholders does not greatly exceed the net earnings of the road.

Amount of interest paid to stockholders, prior to May 1, 1847	$32,700 01	
Amount paid since to May 1, 1848	100,066 35	
Whole amount of interest paid		132,766 36
Amount of net income of our road from the 1st of Jan., 1847, to May 1, 1847, inclusive		6,107 12
Amount of income received from Concord railroad from the 1st day of May to the 1st day of September last		13,705 75
Net amount of income received from 1st day of Sept., 1847, to May 1, 1848		102,751 59
		122,564 46
The whole amount of net earnings, deducted from the interest paid, leaves a balance of interest as a charge upon the treasury of		$10,201 90
The amount of treasurer's receipts are as follows, viz:		
Amount received for stock to May 1, 1847, as per last report	$1,299,967 81	
Amount received since, and to May 1, 1848	1,027,987 82	
	2,327,955 63	
Amount received for interest	21,009 82	
	2,348,965 45	
Received from Concord railroad for use of Northern railroad up to Sept. 1, 47.	19,812 87	
Received for earnings of this road	155,043 84	
Received on account of roads below	117,924 81	
Gross earning of this road	292,781 52	
Add amount of bills payable	111,450 59	
	404,232 11	
Amount received for stock and interest brought down	2,348,965 45	
Making whole amount of receipts	2,753,197 56	
Amount of expenditures:		
General expenses	20,464 13	
Engineering and preliminary surveys	39,499 32	
Land and land damages	92,607 65	
Iron	557,610 22	
Grading and masonry	989,413 23	
Changing roads and streams	34,418 26	
Superstructure	138,133 94	
Fencing	17,437 41	
Bridging	104,716 98	
Cars and engines	206,199 61	
Depots	101,048 23	
	2,301,548 97	
Interest to stockholders	132,766 36	
Discount of 3000 shares sold at 90 per cent	30,000 00	
	2,464,315 33	

Expense of running the road since Sept.

1, 1847	52,377 85
Paid to lower roads	117,924 81
Wood, tools, etc., on hand	19,393 03
Bills receivable	51,654 33
Cash on hand	47,532 21
	2,753,197 56

Abstract of Northern Railroad Income and Expense Account, to May 1, 1848.

Net income received from Concord railroad to September 1, 1847	19,812 97
Gross income from passengers from Sept. 1, 1847, to May 1, 1848	118,001 66
Gross income from freight from Sept. 1, 1847, to May 1, 1848	152,473 58
Income from rents	593 76
" express	1,833 00
" miscellaneous sources	66 65
	292,781 52
Deduct proportions paid lower loads	117,924 81
	174,156 71
Deduct also expenses of running the road	52,377 85
Net balance of income of the road since May 1, 1847	122,478 86

The expense of running the road is as follows:

Ticket and baggage masters	731 86
Handling merchandise	12,009 47
Engineers and firemen	2,746 91
Conductors and brakemen	3,526 32
Repairs of engines and cars	5,506 33
Fuel	8,317 51
Oil	3,554 55
Repairs of road	12,188 74
Removal of snow and ice	201 00
Switchmen and watchmen	1,014 42
Advertising	67 00
General and miscellaneous expenses	2,706 17
Stationery	807 57
	$52,377 85

When we consider that our road was used only to Franklin up to September 1, the first third of our year, and then to Grafton for the next three months, where we could not receive a large proportion of the freight of the Lebanon road, we think you will agree with us in the opinion that our income thus far has been highly encouraging. From the first opening of our road the income has been gradually increasing. Although we may not realize the annual increase of 33⅓ per cent., which the Nashua and Lowell road received for the first nine years of their operations, yet we think we can reasonably calculate upon a very respectable addition to our present business.

It will be seen by the foregoing figures that the net earnings of the road, since we commenced running it ourselves, that is, from September 1, 1847, to May 1, 1848, a period of eight months, was $102,751 59

The interest on our capital of $2,400,000 for the same period of eight months, is $96,000 00. Leaving a net balance of earnings for eight months, including the winter, of $6 751 59 over 6 per cent.

It will also be observed that this capital covers the expenditures on the whole road, which the earnings were for three months on 44 miles, and for five months on 64 miles.—The whole road to White river has not been yet run with the regular trains.

Our number of passengers to Sept. 1, 1847, was	54,204
From Sept. 1, 1847, to May 1, 1848,	72,048
Total,	126,252

Of the passengers,

29,058	were to and from	Boston,
25,517	" "	Lowell,
23,730	" "	Manch. & Nashua,
30,727	" "	Concord, [sev. roads.
17,220	" "	Way-stations on the

The number of passengers over the Concord road, from April 30, 1843, to April 30,

1844, was	73,355
1845,	100,843
1846,	151,530

The number of tons of merchandise transported during the past year is as follows:

By the Concord railroad to September 1, 1847,		
Upward,		11,475
Downward,		6,941
		18,416
From Sept. 1, 1847, to May 1, 1848,		
Upward,	21,925	
Downward,	15,623	37,548
Whole number of tons		55,964

Since September 1, 1847, our gravel trains have run	51,110	miles,
Passenger trains,	32,960	"
Freight trains,	20,972	"
Extra running,	3,770	"
Total,	108,812	"

Our passenger trains have run thus far without accident. One of our freight trains recently came in collision with an engine of the gravel train, in North Enfield. The meeting was at a curve upon our road, and the engines were not running at full speed. No one was materially injured. The engines have been repaired, at an expense not exceeding $200 00.

In April last, as some Irishmen were pushing some stone cars, heavily laden with iron, upon one of our bridges over the Mascomy river, in West Lebanon, the flooring, or cross timbers, gave way, and the men and cars fell into the river. Three or four of the men were severely injured, but we are happy to state that they are all recovering.

We consider we have been fortunate in not meeting with more accidents, as we have been obliged, necessarily, to keep a number of different trains upon our line, for the purpose of gravelling and running the road.

We have carried the mail to the different offices upon our line, until recently, without compensation: we now have a contract with the Post Office Department, by virtue of which we are hereafter to receive remuneration.

Our contract with the three lower roads is similar in its terms to that heretofore made by the Boston and Lowell railroad with the Nashua and Lowell, and Concord railroads.

During the past year the Franklin and Bristol railroad has been organized, and its road put under contract. The grading and bridging of the road are now nearly completed, and its track being laid. This road is comparatively a cheap one. Its whole cost will not probably exceed $200,000. A large majority of its stock is owned by stockholders of our road.

We have no doubt this road will prove an important source of business to our own.—The directors of the two corporations, regarding the present identity of interest, and satisfied that the Northern railroad had the means of running the Franklin and Bristol road at a cheaper rate to the public, than it could be done by themselves, were induced, agreeably to the suggestions of our last annual report, to enter into an arrangement, by which it is stipulated that we take a lease of the Franklin and Bristol road, and agree to run it—receive the income thereof, and pay their stockholders the same *pro rata* dividends upon their stock as we pay our own. This contract is made subject to the confirmation or ratification of the stockholders of the several roads.

And to your action and deliberate consideration, the subject is now on our part respectfully submitted.

The reduction of fares for freight and passengers has commanded our attention. The lower roads have given us an example which we propose to imitate. Though less able to sustain the reduction, we are not less willing knowing that the public will gain by the experiment, if we do not. We propose that our passenger fare from Lebanon to Concord be established at . . . $1 75

From Lebanon to Boston at . 3 25

First Class Freight.

From Lebanon to Boston, per ton,	5 80
Second Class, Lebanon to Boston,	4 80

Having given a summary of our acts, our financial affairs, and the condition and progress of our road, in conclusion we would say, that friendly relations exist between us and with the other roads, with which we now have or may have business connections.

From a late examination of a portion of the line of the Connecticut and Passumpsic river railroad, united with the assurance of some of its efficient managers, we may regard it as certain as any fixed fact, that their road will be opened to Wells river, in Newbury, Vermont, as early as November next. Thus a new avenue, by railroad, will be afforded to the public for the distance of about 40 miles upon the beautiful banks of the Connecticut river, in the direction towards Montreal.

With equal certainty we can now calculate that the Vermont Central railroad will be finished as far as Bethel, being about 30 miles from the mouth of White river, in June or July next, and as far as Northfield or Montpelier, in the course of this year.—We understand that the Vermont and Canada railroad, connecting the Vermont Central with the Ogdensburg road, is now being located by an active board of engineers. The Ogdensburg road is under contract for its entire length, and the work upon its line is going forward with that prudence and energy which ensure final success.

We now number in our association about 1700 different stockholders. Very many of this number are embarked in other similar enterprises.

We commend the extension of the lines of

our Northern road to the patronage and pecuniary aid of such of our stockholders as are able to advance the cause of internal improvement. By helping them, we help ourselves, and also a great community who richly deserve railroad facilities. Let us resolve, then, as fast and as far as our means will justify, to lengthen and strengthen the iron chains that are destined to bind us to Montreal and Ogdensburg.

Directors of Northern Railroad.—George W. Nesmith, Solomon Wildes, Francis N. Fisk, B. B. David, Timothy Kenrick, Chas. Theo. Russell, Nathan Carruth.

May 24, 1848.

Railroad to the Pacific,
And Lieutenant Emory's Report.

Having recently published an able letter from Lieut. Maury, in relation to a railroad to the Pacific, we now give place to the following article from Mr. Whitney, on the same subject, though *not on precisely the same route*, from the Journal of Commerce.

Mr. Whitney has devoted himself to this *mighty enterprise* with a perseverance worthy of all praise, and *deserves success*, whether he achieves it or not.

In this communication are given copious extracts from the able report of Lieut., now *Major* Emory, who accompanied Gen. Kearney in his expedition to California: together with extracts from Colonel Fremont's memoir.

The information contained in the article, in relation to the country, will render it interesting, aside from its bearing upon a choice of routes. We therefore give the whole of it, though it may be divided into two or more parts for convenience.

(*From the Journal of Commerce of Sept. 16th.*)

NEW MEXICO AND CALIFORNIA.

Messrs. Editors—On reading your remarks some days since, on the failure of the Senate Territorial—or Compromise—bill (as it was called) I noticed a strong desire for some compromise of the question, threatening, as you seem to think, so much evil; and you remark upon the value of the territory causing the difficulty. The latter induces me to hand you for publication, if you may think proper, the following extracts from the able and scientific report of Lieut. Emory, during Gen. Kearney's expedition to California.

The great work to which I have exclusively devoted myself for several years past, has led me to examine every subject connected with it, and no part has required or received so much of my consideration as that of *route* and the availability of lands on the route, to furnish the *only* means for the work, and as I could have but one object, that of selecting the route either north or south, that would be sure to furnish means, I have therefore sought to examine every account, and every person, who could give me any knowledge of the topography of any and every part of our continent.

The south generally have been particularly anxious for a more southern route than the one I had fixed upon, and having myself but one object, I would not be unwilling to accommodate their choice if possible.

Although having ascertained to my full satisfaction that there could be no other route than the one selected, where the lands could be made to furnish the necessary means, and that there is no pass through the Rocky mountains between the "South Pass," lat. 42½ deg. and Passo del Norte, lat. about 32 deg., and that from any point on the Mississippi, even as low down as Memphis, the route via the South pass, lat. 42½ deg., to the Pacific at Paget sound or San Francisco, would be more feasible, and as short as any more southern route from Memphis to the Pacific—still I have examined with great care and interest, the route of Gen. Kearney via Santa Fe, the Passo del Norte, and the Gila river to San Diego, with the description of the country as laid down in the report of Lieut. Emory, whose reputation is well known. His description of the country agrees fully with other accounts. Col. Donighan's expedition, by John T. Hughes, Esq., (same route as far as the Passo del Norte) is more particular in description of the country, soil, etc., but less favorable.

The report of Lieut. Emory does him great credit. It is both scientific and businesslike. It speaks for itself, and should be read by every one.

The following extracts require no comments; they show what the country is. I fully agree with Lieut. Emory, that negro slavery cannot be sustained there in any part, and I think it equally clear that a railroad could not be sustained, even if the capital other than the lands could be found to build it.

Page 12.—"We were now on ground (see map of July 10th) long. 98° 52′ 22″, which is traversed by the Nomadic tribe of Pawnees, Sioux, Osages and occasionally the Comanches. Their range is seldom farther east than Council Grove (about long. 96 10.) The country thence to the western borders of Missouri is in the hands of Indians owing allegence to, and receiving stipends from, the United States. (Note. Removed tribes to whom the faith of the nation is pledged that they shall not be disturbed.) They live in log houses, cultivate the soil, rear cattle, and pursue some of the arts of peace. They form the connecting link between the savage of the plains and the white man of the States.

Page 11.—"As you draw near the meridian of the Pawnee Fork, 99 deg. west of Greenwich, the country changes, almost imperceptibly, until it merges into the arid barren wastes, described under that section. The transition is marked by the occurrence of cacti and other spinois plants, the first of which we saw in long. 98."

Speaking of the river, the Pawnee Fork at Bent's Fort, he says:

Page 12.—"The bottom land, a few feet above the level of the water, varies in width, from half a mile to two miles; and is generally covered with good, nutritious grass.—Beyond this the ground rises by gentle slopes into a wilderness of sand hills on the south and prairie on the north.

"The soil of the plains is a granite sand, intermixed with the exuviæ of animal and vegetable matter, supporting a scanty vegetation. The eye wanders in vain over these immense wastes in search of trees; not one is to be seen. The principal growth is the Buffalo grass and cacti, in endless variety though diminutive.

"The Buffalos are sometimes driven b the severity of the winter, (which is here, a at 'the Big Timber' intense for the latitude) to feed upon the cotton-wood of this place."—p. 13.

In his notes, Major Emory says:

Page 15.—"Aug. 2. Here we turned to the left, and pursued our course over arid elevated plains for 20 miles without water. When we reached the Timpas, we found the water in puddles, and grass bad. Our ascent was considerable to day, elevation 4523 feet.

"On these hills we found cedar growing, very stunted—a very stunted growth of plums, moss, and cacti in great variety, but diminutive.

"Aug. 4. The road wound through the valley of the Timpas. Dwarfed cedar skirted the road on each side; strata of hills same as yesterday.—p. 16.

"The pasture was so bad, that Col. Kearny determined to march to the "hole in the Prairie." The total distance to-day was 36 miles. The horses are now falling away in an alarming manner.

"The vegetation was the same as that of yesterday, as far as we could judge from its burned and parched condition; elevation, 5,560.—p. 17.

"Aug. 5.—To-day we descended 11½ miles, and reached the valley of Purgatory, a *swift running stream* a few yards in width, but no grass of any amount at the crossing. p. 17.

"Aug. 6 Col. Kearny left, &c.—and scattered Sumner's dragoons three or four miles up the creek to pass the day in renovating the animals by nips at the little bunches of grass spread at intervals in the valley. Elevation 7,169 feet.—p. 18.

"Aug. 7. Crossed the Raton, 7,500 feet. (*Note* higher than the South Pass, which is 7,490 feet. See Faemont Rep., page 128.

"The decent is much more rapid than the ascent. For the first few miles, through a valley of good burnt grass, and many beautiful flowers. But frequently you come to a place where the stream, (a branch of the Canadian), has worked itself through the mountains, and the road has to ascend and then descend a sharp spur. Here the difficulties commence.—p. 19.

"The growth on to-day's march, was pinon in small quantities, scrub oak, a few lamita bushes, and on the Canadian a few cotton wood trees; except at the camp there was little or no grass. The evening threatened rain, but the clouds passed away. We have had no rain since we left Cow Creeks, thirty days ago. We are now in what may be called the Paradise of that part of the country between Bent's fort and San Miguel; and yet he who leaves the edge of the Canadian or its tributaries, must make a good day's march to find wood, water, or grass.—Elevation, 6,112 feet.—p. 20.

Page 23. "Aug. 11, elevation, 6,946.

"Aug. 12. The plains are almost desti-

tute of vegetation. The hills bear a stunted growth of pinon and red cedar; elevation, 6,670.—p. 24.

"Aug. 13. (Encampment at the Canon). Grass was miserable, and the camp ground inundated by the shower to-day — which is quite a rarity. Elevation, 6,395.—p. 25.

"Aug. 16. Passed another Canon. The road passed over to-day was good, but the face of the country exceedingly rugged, broken, and covered with pinon and cedar. To the left one or two miles distant, towers a wall nearly perpendicular, 2000 feet high, apparently level on the top, and showing as near as I could judge from the road, an immense stratum of red sand stone.—p. 29.

"Aug. 18. Four or five miles from the old Picas, the road leads into a Canon, with hills on each side from 1000 to 2000 feet above the road, in all cases within cannon shot, and many within the point blank musket shot.—p. 31.

"The geological formation much the same as before described, until you begin to descend towards the Del Norte, where granitic rocks and sand are seen in great abundance as far as Santa Fe. Cedar pinon, and a large growth of long leafed pine are densely crowded wherever the rock offered a crevice, —until within 6 or 8 miles of the town.

"(Santa Fe).—On leaving the narrow valley of the Santa Fe, which rises from 1000 feet to a mile or two in width, the country presents nothing but barren hills, utterly incapable, both from soil and climate, of producing anything useful. The valley is entirely cultivated by irrigation, and is now covered with corn. Five miles below the town, the stream disappears in granitic sands.—p. 34.

"Sept. 2. We descended the valley of the Santa Fe river nearly west for 5 miles, when we left the river and struck across a dry arid plain, intersected by dry beds of streams. Twenty-three miles brought us to the Galisteo Creek, which at that time was barely running. From this place to its mouth there is scarcely the sign of vegetation. At the dry mouth of the Calisteo and directly on the Del Norte, is the town of Santo Domingo.—p. 36.

"The valley of the Del Norte is here quite narrow and the soil sandy.—p. 38.

"Sept. 3. Between San Filippe and the Angosturas, six miles below, the valley of the river is very narrow, affording no interval for agriculture. On the west side, the banks are steep walls, crowned by seams of basalt, forming the table land. The east is composed of rolling sand hills, rising gradually to the base of the mountains, and covered with large round pebbles. Elevation, 5000 feet.—p. 39.

"Sept. 4. Below the Angosturas the valley of the river opens into a plain varying from 2 to 6 miles wide; soil sandy and cultivated by irrigation.—p. 40.

"Sept. 6. The valley suddenly contracts below Padilla, between Isoletta and Piralta. On the east side of the river there is deep sand, and the country is perfectly barren.—p. 41.

"Sept. 7. About 11 o'clock the whole character of the night was changed by an east wind that came rustling down from the mountains, driving the sand before it. Nearly the whole of the distance travelled in the last three days has been over drifting sand, with only occasional patches of firm soil.

"Sept. 30. We decamped a little more than half way between Albuquerque and Pardillas on a sandy plain, destitute of wood and with little grass.—p. 46.

"Sept. 30. Feeling no desire to go over the same ground twice, I struck off on the table lands to the west, and found these a succession of rolling sand hills.—p. 47.

"Oct. 4 The wagons mounted the sand hills with great difficulty. The river impingnes so close on the hills as to make it necessary, on the western side, to mount the table land. These plains, reaching to the base of the mountains, are of the same character as heretofore mentioned, of rolling sand hills.—p. 49.

"Oct. 5. Camp near Secora—leave the river and strike for the Gila. We accordingly moved only 6 miles to-day, and encamped a little north of Secora, preparatory to taking the hills to-morrow. The prospect is forbidding; from Sierra Lescadron, opposite the amphitheatre, as far south as the eye can reach on the western side of the river, is a chain of precipitous basaltic mountains, traversed by dykes of trap; through these we are to pass.—p. 51.

"Oct. 6. Determined not to leave the river.—p. 52.

"Oct. 8. The valley of the Del Norte, as we advance, loses what little capacity for agriculture it possessed. The river commences to gather its feeble force into the smallest compass to work its way around the western base of Fra Cristobal mountain.—The Chihuahua road runs on the eastern side, and that part of it is the dreaded "jornada" of the traders, when they must go most seasons of the year 90 miles without water. Our road over hill and dale led us through a great variety of vegetation, all totally different from that of the United States. To-days observations of the plants may be taken as a fair specimen of the southern part of New Mexico. First, there were cacti in endless variety, and of gigantic size; our new and disagreeable friend, Carrea Mexicana, Fremontia, &c.

The table lands, reaching to the base of the mountains to the west, are of sand and large round pebbles, terminating in steep hills from a quarter to a half a mile from the river, capped with seams of basalt.—p. 54.

"Oct. 9. The country becomes broken, and the valley narrows into a cannon which sweeps at the base of Fra Cristobal mountain, making it necessary to rise to the table land on the west side, which we found traversed by deep arroyas, crowned on their summits by basalt.—p. 54.

"The road was unbroken, obstructed by bushes, and so bad that the wagons made only 11½ miles, and the teams came into camp *blown* and staggering, after their day's work. Expecting nothing better ahead, it was determined to leave the wagons and send back for pack saddles.

"For the last night or two, it has been unusually cold, the thermometer ranging from 25 to 32°; but during the day it mounts up to 75 and 80; Lat. 33, 20 20.—p. 55.

"Oct. 15. After travelling 3 miles and a half, we turned from the Del Norte and took final leave of it—altitude 4,810 feet. Capt. Cook left this route and went further south as far as lat. 31½° then northwest.

"Oct. 16. We commanded the approach to the Membres mountains, over a beautiful rolling country. The soil in the valley, and to the hill tops, of the best quality—nothing but rain is required to make this part of the country inhabitable. (Cacti prevailed).—p. 57.

"Oct. 18. Succession of hills and vallies, covered with cedar live oak, and some long leaf pines. Elevation, 6,167.—p. 58.

"Oct. 19. The country passed over in the first part of the day was beautiful in the extreme. A succession of high rolling hills, with mountains in the distance. The soil rich and wavering with grama. The latter part was more barren, and covered with artemisias.—p. 59.

"We wended our way through the narrow valley of Night creek. On each side were huge stone buttes, shooting up into the skies. At one place we were compelled to mount one of these spurs almost perpendicularly. This gave us an opportunity of seeing what a mule could do.—p. 61.

"Oct. 21. After going a few miles, crossing and recrossing the river a dozen times, it was necessary to leave its bed and avoid a canon. This led us over a very broken country, traversed by hugh dykes of trap and walls of basalt.

"The earth in the river bed, where it was not paved with fragments of rocks, was loose resembling volcanic dust, making it unsafe to ride out of the beaten track. A mule would sometimes sink to his knee. This was a hard dry day on the animals; the steep ascents and descents shifting the packs, and cutting them dreadfully. The howitzers did not reach the camp.—p. 62.

"Oct. 23. Last night the heavens became overcast, the air damp, and we expected for the first time since leaving Santa Fe (a month to-morrow) to have a sprinkle of rain; but at 9 this morning the clouds had all cleared away.

"The changes of the temperature are very great, owing to the distance from the influence of large masses of water, and if they are accompanied with corresponding changes in humidity, they would be insupportable.—Last night we went to bed with the thermometer at 70° and awakened in the morning shivering; the thermometer marking 25°.

"The table land, 150 feet above the river, was covered so thick with large paving pebbles, as to make it difficult to get a smooth place to lie upon. The growth of to-day and yesterday, on the hills and in the valley

of the Gila, very much resembles that on the Del Norte, the only exceptions being a few new and beautiful varieties of the cactus.

To be Continued.

Rider's Improved Truss Bridge.

This invention consists in the peculiar introduction and application of the longitudinal strength of iron, in such a manner as, whilst it tends effectually to secure the durability, also presents a structure of greater economy than any other iron bridge, of equal dimensions, at present in use.

The truss of the Rider bridge is principally composed of an upper and lower chord, upright posts, and suspension chords, or diagonal ties. The upper chord forms an arch, and has to sustain only a compressing strain; is made of cast iron, with heavy flanges, so arranged as to give it great stiffness; is longer and larger than the lower chord, which having to sustain a tension strain, is made of wrought iron. The diagonal ties, or suspension chords, are made of wrought iron, and are secured only to the upper and lower chords at regular intervals, running upwards and downwards, diagonally with the chords, and at nearly right angles with each other. The posts are of cast iron, and are placed at equal distances apart, along the whole length of the chords, to keep the upper and lower chords asunder, and at the same time assist in preserving the truss in line. Each part of the truss is made of a size and strength proportionate to the span of the bridge, and weight of the load which it is designed to support.

When these diagonal ties are thus attached and the chords also kept apart by the iron posts above mentioned, the truss is formed upon which the platform or roadway is to rest.

To the engineer, it will be at once apparent that the great strength of the truss is in the arched top chord and suspension or diagonal ties; but these alone, in conjunction with the posts and chords, would not make that equal and effectual resistance to the action of a load passing over the bridge, which is desirable, or prevent what has always been found so very objectionable in iron suspension bridges, namely, the oscillation or vibration of these structures upon the passage of a motive power over them.

In order to equalize the strength of the Rider bridge, a wedge or key is inserted on each side of the top of the iron posts under the top chord, by the action of which the upper and lower chords are kept at the greatest possible distance from each other, the *full strength of the longitudinal tension of the wrought iron ties effectually obtained* and the *cambering* or *arching* of the bridge, thus permanently secured; and in order to obviate oscillation, longitudinal ties, or braces, are put under the floor of the bridge, made of wrought iron, running diagonally from one truss to the other, and at right angles to each other, brought to great tension or strain with a screw nut on the end, which entirely prevents any tendency to oscillation.

This peculiar application of the *longitudinal tension* of wrought iron in the construction of an iron bridge, and the *cambering* or *arching* as just explained, by means of the wedges or keys, are deemed entirely original and will be found to be highly important and valuable discoveries.

It is not, however, upon any separate part that the advantages of this bridge will be found to depend; all the parts act together, symmetrically, scientifically, and mechanically, the combination and effects of which will be more fully explained in the following remarks. A weight upon the platform of the bridge has a tendency to compress or shorten the top chord, and to distend or lengthen the lower one; both these effects are counteracted—the former to a certain degree by the tension strain of the diagonal ties having an upward bearing or strain, and the latter by the diagonal ties having a downward bearing, which ties, by the action of the wedge or key placed at the top of the posts and underneath the top chord, are kept at their full strain and strength by the lengthening of the posts, as the wedge or key is further inserted, *whilst at the same time the wedge or key also serves to keep apart the upper and lower chords*, and thus, by the combined power of these several parts acting upon each other, solidity, strength, and firmness are given to the entire truss.

But as it may be supposed, upon a slight and partial view of the diagonal ties, that they merely form an ordinary lattice work, and consequently are neither original nor of greater strength than that well known contrivance, a further consideration of these cross ties is necessary in order to show not only their originality, but the great value and importance of them as applied in this invention.

In the first place, it is known that in the ordinary lattice bridge, the lattices are of necessity pinned or locked together at their angles; consequently, a fulcrumage is made on the straight line drawn through the centre of the truss, which is a well known defect in the principle of its construction.

But in the Rider bridge it is entirely different; for, by the diagonal ties *not being fastened* in the centre of the angles, the fulcrumage is wholly removed from the space between the upper and lower chords and substituted by the more scientific, and much more valuable principle of the *arch and suspension*. This very great superiority of the Rider bridge forms a most interesting feature in the invention, and is deserving of particular attention.

Again, in a common piece of lattice work upon which there is a strain or weight, it is clear that the pressure must be unequal; the several parts act in different directions, without having any counteracting force in any one of them, and all being pinned or locked together, so as to form one body, it cannot be of equal strength throughout; and, therefore, the motive force of a body passing over such a bridge must evidently tend to loosen, and thus weaken by degrees the power of resistance of the whole structure, as is always experienced in wooden bridges, supported as they are, entirely by the strength of the lattice; whereas, in the Rider bridge the diagonal ties are not lattices permanently fastened to each other, but chords acting separately and in different directions upon every part of the supporting truss. Thus the diagonal ties running from the ends of the top chord downwards towards the centre by means of the upright post, tend to support the lower chord to which they are attached, upon the principle of *suspension*; whilst the diagonal ties running from the centre of the bridge, along the whole length of the top chord downwards towards the end, by means, also, of the iron posts and keys, have on the principle of the *arch*, a counteracting force, and exert their strain in resisting the compressibility of the upper chord when weighted.—These opposite forces are evident from the relative bearing and different direction of the cross ties, to each one of which is given its separate action and its greatest strength, by means of the longitudinal tension produced by the operation of the wedge or key as before mentioned.

Having thus described the action of the diagonal ties, the strength and perfection of the truss will be better understood by explaining that of the upper and lower chords to which they are attached.

The upper chords are designed to be of cast iron, proportioned according to the length and capability of the bridge, but always of larger dimensions than the lower chords; because the effect of a load passing over the bridge, is evidently to compress the top chord in the direction of the centre, whilst the effect upon the lower chord is to distend it.

The lower chord, on the contrary, is made of two bars of wrought iron connected together, which, by the resistance produced in the action of the diagonal ties, and the compressive tendency of the top chord, is relieved from the downward pressure of a load while passing over the bridge, and therefore has only a longitudinal tension upon it.

Hence, upon the due consideration of these facts, the peculiar principle of the whole truss will be found to consist, by the combination of the several parts in obtaining the *longitudinal strength of the diagonal ties, and of the lower chords, by the positive operation of the wedge or key, and the equal distribution of tension or strain throughout the entire truss*, thereby combining the three strongest principles known in mechanics, as applied to this kind of structure, namely the arch, suspension, and triangle.

With regard to the economy of a bridge built upon the foregoing plan, it is sufficient in this brief outline to state that, if the first cost of a wooden bridge of equal span be given, and the amount added for repairs, insurance, wear and tear, (ten, or at most fifteen years being a fair estimate for the duration of a wooden bridge, when the whole of the first cost and all charges are entirely consumed), the Rider iron bridge can be erected at a cost not exceeding the estimate of the wooden bridge as here laid down, without taking into the account the loss of business by fire, which, before a bridge can be rebuilt is often much more than the whole cost of

the structure, with the further most important item, that whilst the latter has to be entirely rebuilt in so comparatively short a space of time, the former will stand with no repairs being needed, (requiting only to be occasionally painted), for a period, at a very moderate computation, of at least five times the duration of any wooden structure whatever. And as the Rider bridge has received the highest encomiums from many scientific persons who have examined into its properties, and the plan of its construction, there will be little doubt that it will soon supersede all others and become the most useful and economical bridge that can be adopted.

The Rider bridge has been in use on the Harlem railroad a year and a half, and fully tested by the very able chief engineer of the road, Allen Campbell, Esq., the result of which has induced the company to give further orders; the properties and plan of construction have been examined also by many other scientific and practical engineers, who have bestowed on the inventor the highest encomiums for his skill and ingenuity, and besides the bridges for the Harlem railroad, orders have been taken from the Erie rail road company, T. S. Brown, chief engineer; the Louisa railroad, Va., W. A. Kuper, chief engineer; the state of New York, by the Canal commissioners; and the White's Corners and Buffalo plank road company, near Buffalo; all of which will be soon in use, and may be referred to, as to the great utility of the Rider bridge over all others now known; and in confirmation of the foregoing reference is made to the reports and certificates hereto annexed.

Extract from the Report of the Committee on Roads and Bridges, made to the Managers of the 19th Annual Fair, at the Castle Garden, in the city of New York, Oct. 1846.

Of Mr. Rider's iron railroad bridge, the committee would say that in their opinion it is of great importance that railroad bridges should be constructed of a less destructible material than wood, and that every effort to obtain that result is entitled to encouragement.

Mr. Rider, in his plan, No 262, has aimed to effect this by a combination of wrought and cast iron, whereby, with a limited amount of material, the adequate strength is to be obtained. The committee think favorably of the combination, and for bridges of not too large a span, believe that his plan will be found useful, and they, therefore, recommend a favorable notice on the part of the institute.

HORATIO ALLEN,
JOHN B. JERVIS,
JOHN D. WARD,
} Committee.

I hereby certify that the above is a true copy from the report on file, (a Gold Medal awarded).

H. MEIGS, *Recording Sec.*

New York, Nov. 10th, 1846.

Copy of Reports made by a Committee appointed by the National association of inventors, for the purpose of examining and Testing Nathaniel Rider's Patent Iron Truss Bridge.

The committee of the National association of inventors, charged with the examination of the plan of an Iron bridge, submitted to the association by Mr. Nathaniel Rider, respectfully represent that they have inquired into the plan of said bridge, and have carefully examined one which has actually been constructed in conformity with said plan at the workshop of the Harlem railroad company. They found that said bridge is composed of an octangular frame, the upper rail of which, with the queen posts, are composed of cast iron, while the lower rail is formed of wrought iron; this frame is diagonally braced by bars of wrought iron. In inquiring into the principles on which said bridge is constructed, the committee have come to the conclusion that the *two materials are so combined* as to bring each of them into action to resist the effects of a force applied to bend or break the structure, on the mode for which its peculiar nature and strength is obtained, with a small quantity of either material.—Without entering into a comparison with other plans of spanning openings by either of these materials, or by their combinations, the committee feel warranted in expressing a decided opinion that the plan in question can be applied with great advantage and economy in various cases, and that it is particularly advantageous as a mode of constructing viaducts on railroads. In forming this opinion, the committee, unwilling to trust its theory alone, required the inventor to submit that which has been stated to have been actually constructed to the test of experiment. In conformity with their request, the bridge, which has a *span of forty feet*, and contains about *two and one half tons of iron*, was loaded with a large locomotive engine, a tender, and a pair of large wheels with their axle; the latter being placed over one of the abutments, was not reckoned in the weight, which omitting, amounted to *twenty four tons*.

Under the pressure of this weight, the bridge sprang the forty-four hundredth part of an inch, and upon the removal of the engine, which weighed eighteen tons, it immediately resumed its former figure. The committee, therefore, concluded that it must have borne at least four times the weight, without reaching the limits of its elasticity, which limits are far short of that at which danger of fracture is to be apprehended.

The committee have, in conclusion, to state, that the plan in question requires the use of a less weight of materials than any other, with the exception of suspension bridges, and is in consequence, capable, if properly proportioned, of being constructed of a greater span than any bridge except those on the principle of suspension, to which its freedom from oscillation renders it far superior.

JAMES RENWICK,
GEORGE GIFFORD
CLINTON ROSEVELT,
J. L. KINGSLEY,
} Committee.

New York, July 27th, 1846.

I certify that the above is a correct copy from the minutes.

JOSEPH P. PIRSSON, JR., *Rec. Sec.*

New York, April 4th, 1848.

This is to certify that the Rider Patent Iron Bridge, now on the New York and Harlem railroad, crossing 109th street, of 70 feet span, is in as good condition now as when first built, and of a superiority over all bridges that I know of now in use. It was built in April, 1847.

PETER K. BRASTOW,
Superintendent N. Y. and H. R. R.

Engineers Office, N. Y. and Harlem R R.
Croton Falls July 29th 1848.

An Iron bridge of about 70 feet span, on "Riders plan," was put on this road in April 1847, between the city of New York and Harlem, over which part of the road trains pass very frequently, and many of them drawn by heavy engines. After sixteen months of continued use, the bridge has answered every expectation; and so well satisfied am I of its strength and efficiency, that contracts have been made for several small spans of about the same length on the extension of this road, which are now in process of erection.

Several road and street bridges over the railroad, have also been built on this plan on the island of New York; these are light, durable and cheap structures.

From my knowledge of Rider's bridge, obtained from experience on the road, I commend it to the favorable notice of railroad companies.

ALLAN CAMPBELL, *Chief Engineer.*

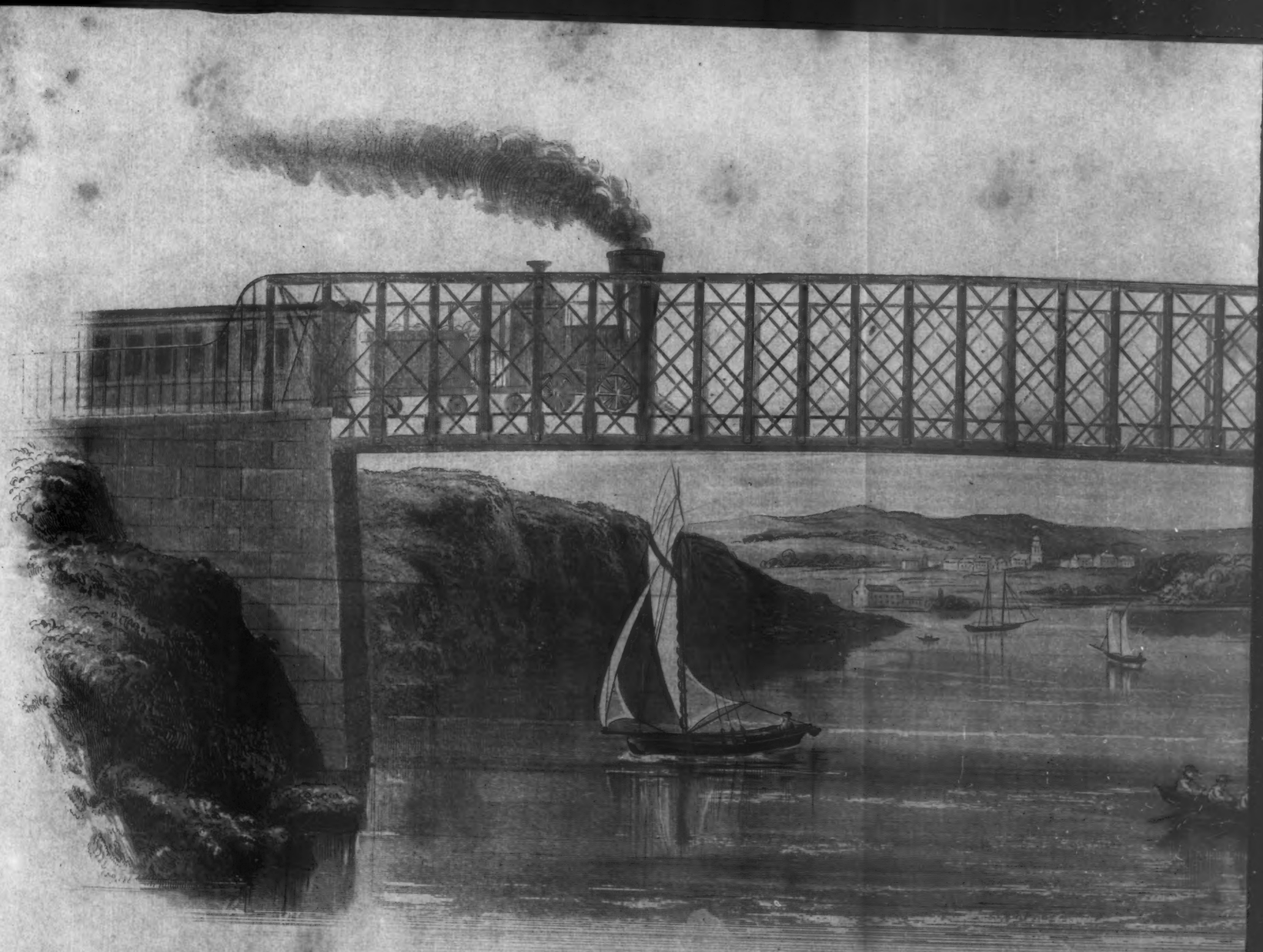
I have examined the plan upon which the Rider bridge is constructed, and fully concur with the opinion above expressed by Mr. Campbell the chief engineer of our road.

ROBERT SCHUYLER,
President N. Y. and H. R. R.

Conway Tubular Bridge.

We find in the R. W. Chronicle of 14th October, the following statement in relation to the second tube over the Conway, on the Chester and Holyhead railway. The first one of the pair has now been in successful use several months without the least indication of yielding, and this one completes the double track at this point. The mail for Ireland will pass over this line next season, or as soon as the bridge—a similar structure—is completed over the Menai Straits. These structures are noble evidences of the advance of the engineering science of the age, and leads us to look forward with confidence to the accomplishment of other equally difficult and useful works

CHESTER AND HOLYHEAD.—Oct. 12.—The second tubular bridge over the Conway Straits was floated on the pontoons to the piers. The operation, combined with the stupendous machinery employed in the process, attracted large crowds from Conway, and other parts of the principalities. At precisely 9 A. M., or 50 minutes before high water, Capt. Claxton, R. N., gave the signal, and almost immediately the tremendous freight was seen stealing to its destination.—Next to him was Mr. R. Stephenson, M. P., attended by several other engineers. The tube was lifted in about 60 minutes, com

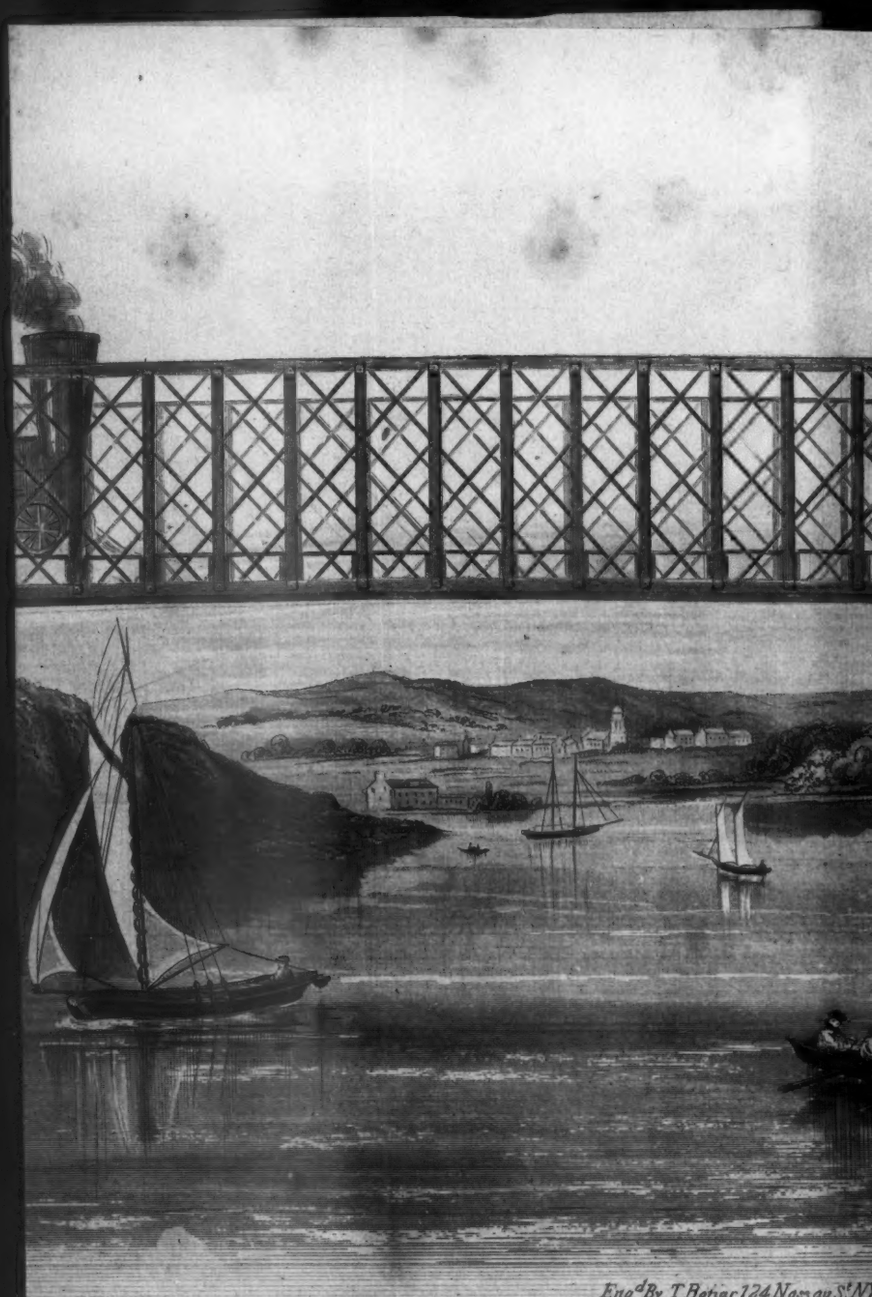


Engd By T. Bobiac 124 Nassau St NY

PLAN OF RIDER'S IMPROVED IRON TR

PATENTED 1845

Orders for the above Bridges received at the office of
74 Broadway or by W. Rider & Brothers.



Eng.d By. T. Bobar, 124 Nassau St. N.

LAN OF RIDER'S IMPROVED IRON T

PATENTED 18

Orders for the above Bridges received at the offic

74 Broadway, or by W. Rider & Brothe

n au S.t N.Y.

N TRUSS BRIDGE, 150 FEET SPAN,

D 1845.

office of the Rider Iron Bridge Company.

Brothers, 58 Liberty Street, New York.

M. M. WHITE, AGENT.

mencing at a few minutes past 9 a. m., and with its weight of 1,300 tons was got safely home at a few minutes past 10 a. m., amid enthusiastic bursts from the by-standers, and a salvo of artillery from the castle walls.—The entire operation was effected without the slighest accident. Three cheers were given for Stephenson. Now that the tube has been successfully raised, what is called the "testing process" a most important one, will follow. This will be done by removing the wedges that support the tube upon its cradle, the ends of the tube being left with a hold of 6 ft. each on the stone piers. To ascertain the flexure of the tube, about thirty ballast wagons, each filled with iron, in all 300 tons, will then be placed, and remain for a given period, in the centre. One advantageous feature in the operation was that the pontoon in their progress made no water.—On Saturday or Monday the whole structure will be completed by means of the hydraulic machines. The masonry will be built in under the corballing, and in another fortnight the trains will run through uninterruptedly. The other tube will then be closed for a short time to allow of the alteration of the rails, so as to admit of the removal of the transverse timbers, which may be dispensed with, and trusting only to the the transverse plates of iron. The first tube has now been subjected to five months' experience in all weathers, and it has been found, from the most minute and delicate observation, that the deflection varies only from the temperature up and down an inch, and although heavy rains have passed daily, the general deflection has not varied from what it was when first brought into use. On the return of the special trains, several hundreds went over the new line from Chester to Shrewsbury, the entire operation being completed before 11 a. m.

Mode of Extinguishing Fires at Sea.

SIR,—As the danger from fire at sea is attended with so many appalling circumstances (of which we have had a recent instance in the fatal and melancholy catastrophe of the *Ocean Monarch*), I beg through the medium of your widely circulated paper, to submit for the public consideration, and especially underwriters, the following plan, as a cheap, simple and efficient method of preventing the occurrence of such accidents. It occurred to me in the summer of 1846, during a casual conversation with Dr. Montgomery, superintending surgeon, H. E. I. C. S., then on the eve of returning to India. The principle is as follows:

Flame or combustion cannot go on where there is carbonic acid gas. This is one of the elementary principles of chemistry. It may be shown in various ways. A lighted taper, plunged into a jar of carbonic acid gas is instantaneously extinguished; or, if we take the glass of a common argand burner, and close the upper end of it by a flat plate of glass, or even by a piece of card or pasteboard, firmly, so completely as to prevent any current of air through the tube, on introducing for about an inch or so the flame of a candle at the outer extremity (the glass of the argand burner being held upright) it will shortly—usually in the space of little more than a minute, be extinguished, merely by the accumulation of carbonic acid gas, produced by its own combustion. The production of carbonic acid gas is completely at our command, for on adding dilute sulphuric acid to chalk, we can set at liberty, in the space of two or three minutes, enormous volumes of the so called fixed air. The cost of material for a ship of 1000 tons would not exceed at the utmost, 15*l.* or 20*l.* sterling.—By means of tubes proceeding from the upper deck, in connection with a cistern containing the dilute sulphuric acid, to the quarters below, where there is most likelihood of danger from fire, or moveable hose, made of gutta percha, which can be introduced into any part of the vessel, the oil of vitriol, previously diluted with water, can be at once poured over the chalk, which is thrown down in the place where the fire rages, and immediately, the corbonic acid being set at liberty, the fire is extinguished; for combustion cannot go on in an atmosphere of carbonic acid gas.

I have been much occupied experimenting on this subject: and I find that from 5 tons of chalk as much carbonic acid may be obtained as will be sufficient to fill a vessel of 1000 tons burthen. The expense of laying tubes will not exceed 30*l.* or 40*l.*; and once laid, there is no further trouble or expense. I may observe also (but experiments are at variance on this subject) that it is not requisite to have an atmosphere absolutely consisting of carbonic acid gas to extinguish flame, for some experiments show that a taper does not burn in an atmosphere of three parts atmospheric air, and one part carbonic acid gas. Lightning conductors are provided for ships; surgeons also take care of the health of the crew; assuredly no expense (and it is but a trifle) would be grudged to secure a ship and its passengers from the contingency of such a melancholy mishap as that of fire. If this method will do, there seems to be everything in its favour, all our emigrant ships, indeed every ship, ought to be secured against a calamity which really must be held as the most dreadful which can occur to a vessel at sea.—W. REID, M. D.: *Salisbury street, Strand, Aug.* 30

JAMES LAURIE, *Civil Engineer.*
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.

Railroad Routes Explored and Surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures
October 14, 1848. 6m*

RAILROAD IRON.

THE TRENTON IRON COMPANY ARE now turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works, on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to
COOPER & HEWITT, Agents,
17 Burling Slip, New York.
October 30th, 1848.

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of al. sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

JAMES HERRON, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.

MODELS of this Track, on the most improved plans, may be seen at the Engineer's Office of the New York and Erie Railroad.

DEAN, PACKARD & MILLS,
MANUFACTURERS OF ALL KINDS OF
RAILROAD CARS,
SUCH AS
PASSENGER, FREIGHT AND CRANK CARS,
— ALSO —
SNOW PLOUGHS AND ENGINE TENDERS
OF VARIOUS KINDS.
CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and
SHAFTING FOR FACTORIES.
☞ *The above may be had at order at our Car Factory,*
REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
SPRINGFIELD, MASS.
1y48

TO CONTRACTORS.

OFFICE NASHVILLE & CHATTANOOGA R.R. Co.
Nashville, 9th November, 1848.

PROPOSALS WILL BE RECEIVED AT this office on 20th December next, for the Graduation and Masonry of forty miles of road, viz: twenty miles next to Nashville, ten miles crossing the Barran fork of Duck river in Bedford county, Tennessee, and ten miles on the northwest side of Tennessee river, in Jackson county, Alabama.

Profiles and plans may be seen at this office after 12th December. By order of the board.
C. F. M. GARNETT,
Chief Engineer.

N. B. Twenty-five miles of road (including the Tunnel,) and six miles heavy mountain work are under contract. Seven Hundred Laborers are wanted by the Contractors. 5t*48

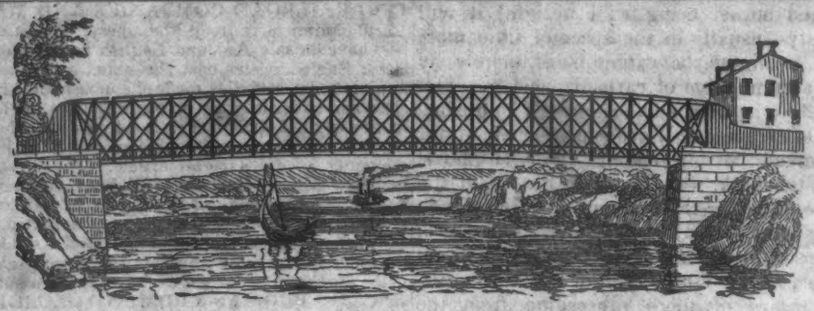
☞ NOTICE. ☜

RAILROAD LINE BETWEEN ALBANY AND BUFFALO, N. Y.

1848.—SCHEDULE FOR RUNNING.—1848.

Going west.		1st train.	2d train.	3d train.
Leaves	Albany	7½ A.M.	2 P.M.	7 P.M.
Pass	Utica	1 P.M.	7½ P.M.	1½ A.M.
Pass	Syracuse	4½ P.M.	11 P.M.	5 A.M.
Pass	Auburn	6½ P.M.	1 A.M.	7 A.M.
Pass	Rochester.	12½ M.N.	7 A.M.	1 P.M.
Arrives at	Buffalo	5½ A.M.	12 M.	6 P.M.
Going east.		**1st train.**	**2d train.**	**3d train.**
Leaves	Buffalo	7½ A.M.	2 P.M.	7 P.M.
Pass	Rochester.	12½ M.	7 P.M.	12 M.N.
Pass	Auburn	6½ P.M.	1 A.M.	6 A.M.
Pass	Syracuse	8½ P.M.	3½ A.M.	8 A.M.
Pass	Utica	12 M.N.	7 A.M.	11½ A.M.
Arrives at	Albany	5 A.M.	12 M.	4½ P.M.

Adopted February 18, 1848, in convention at Albany. (Copy.) T. Y. HOWE, JR.,
Secretary of the Convention.



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having now been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the *Arch*, *Suspension* and *Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

THE RIDER IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Rail Road or other purposes, made under the above Patent, at short notice, and at prices far *more economical* than the best wood structure, and on *certain conditions*, the first cost may be made the same as wood.

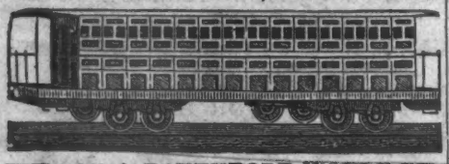
Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, *up stairs*, or of W. RIDER & BROTHERS, 58 *Liberty Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

November 25, 1848.

CAR MANUFACTORY,

CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTFULLY call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description, Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, October 2, 1848. 41tf

RAILROAD IRON.

THE MOUNT SAVAGE IRON WORKS, Allegheny County, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron.—Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President
Mount Savage Iron Co., Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
445 President of the Newcastle Manuf. Co.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,

FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
28 Platt street, New York.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, near Third, below Walnut, Philadelphia.
1y10

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.
Factory, 9th street, near Coates, cor. Melon st.
Office, No. 3 North 5th street,
1y25 Philadelphia, Pa.

RAILROAD IRON.

3000 TONS, ABOUT 60 LBS. PR lineal yard—deliverable early in the Spring, and of undoubted quality, can be contracted for at a low rate. For sale by

DAVIS, BROOKS & CO.,
68 Broad street.

New York, Sept. 16. 1848, 39tf

Also on hand—1000 Tons best quality Rails.

FULLER'S PATENT INDIA RUBBER CAR SPRINGS.—These Springs have been in use for nearly four years, with most complete success, and they are now in use upon most of the principal roads in this country. They are made of the best material, are economical, light, and very easy in their motion—all persons using them are guaranteed against adverse claims.

Offices 78 Broad street New York, and Jas. Lee & Co., 18 India wharf, Boston.

Railroad companies are cautioned against the statements made by the New England car company. The India rubber used by the patentee is the best that can be made, and does not conflict with any existing patent. The rediculous statement that a patentee may not vend his own invention needs no remark.

The patent for these springs was granted to W. C. Fuller, in Oct., 1845, in the United States and in England; A Mr. Ray claims to have invented another spring, which counsel advise, is a mere evasion of Mr. Fuller's patent, and proceedings are being taken to stop that infringement.

"The New England Car Company" have published an article from the pen of Mr. Hale, president of the Boston and Worcester railroad, expressing his opinion concerning these springs—but they have forgotten to publish the whole of that article; it is therefore given in full now, and the portion omitted by the New England car company is printed in italics, that the public may judge of the manner in which this "company" pervert Mr Hale's meaning.

G. M. KNEVITT, Agent,
78 Broad St., New York.

September 30, 1848.

[*From the Boston Advertiser of the 7th June.*]

INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring which we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. *Each spring is composed of several circular layers or rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr W. C. Fuller, in England and France, and also in this country. Mr. Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper.*"

DIRECT ACTION ENGINES
FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,

AND ALSO

THE ANNULAR RING PISTON ENGINES, of Messrs. Mauldslay, Sons & Field, of London, may be built in the United States, under license, which can be obtained of their agent,

THOMAS PROSSER, C. E.,
28 Platt street, New York.

May 6, 1848.

WILLIAM JESSOP & SONS,
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving, from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—Square, flat & octagon.
Best warranted Cast Steel—Square, flat & octagon.
Best Double and Single Shear Steel—Warranted.
Machinery Steel—Round.
Best and 2d gy. Sheet Steel—for Saws and other purposes.
German Steel—flat and sqr., "W.I. & S." "Eagle" and "Goat" Stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms, by WM. JESSOP & SONS,
91 John Street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce St., Philadelphia.
Alex'r Fullerton, & Co., 119 Milk St., Boston.
Stickney & Beatty, South Charles St., Baltimore.

May 6, 1848.

NEW PATENT CAR WHEELS.

THE SUBSCRIBERS ARE NOW MANUfacturing Metallic Plate Wheels of their invention, which are pronounced by those that have used them, a superior article, and the demand for them has met the most sanguine expectations of the inventors. Being made of a superior quality of Charcoal Iron, they are warranted equal to any manufacture.

We would refer Railroad Companies and others to the following roads that have them in use. Hartford and New Haven, Connecticut River Railroad, Housatonic, Harlem, Farmington, and Stonington.

SIZER & CO.

January 29, 1848. tf Springfield, Mass.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

TO MACHINISTS & MANUFACTURERS. The Subscribers have taken the READING CAR AXLE MANUFACTORY—and are prepared to execute orders for *Axles of every description*, and Wrought Iron Shafts for Steamboats, Mills, etc., made from superior material, at short notice. Address *Reading, Pa.*

ANDREW TAYLOR & CO.

August 5, 1848—3m*

RAILROAD IRON—SHEET IRON—BRASIER'S RODS—HOOPS—SCROLL—BANK'S BEST—& OTHER GOOD MAKES OF ENGLISH IRON.

100 Tons Railroad Iron—Staffordshire make—56 pounds per yard—shipped from Liverpool 20th July, expected to land on wharf from 10th to 20th September.

Also have Invoices of Sheet Iron, Brasier's Rods, Hoops, Scroll, and Band Iron, Banks best, and other good makes of English Rolled Iron, to arrive, suitable for Railroad Axles, etc., etc., equal in quality to American Rolled Iron. I have agency of several best makers in England and Wales, and can import for Railroad Companies, and others, on best terms, and at much less prices than they can be supplied from American Mills.

DAVID W. WETMORE,
218 Water street.

New York, Sept. 9, 1848. 6w*

MATTEWAN MACHINE WORKS.

THE MATTEWAN COMPANY HAVE added to their Machine Works, an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also, *Tenders, Wheels, Axles*, and other Railroad Machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen*, or *other* Mills, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting, and *Drilling* Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at

39 Pine Street, New York.
WM. B. LEONARD, *Agent.*

FAIRBANKS' RAILROAD SCALES.

THE Subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accurracy of weight and despatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon Railroads, either in the United States or Great Britain; and the manufacturers refer with confidence to the following in the United States.

Eastern Railroad,	Boston and Maine R. R.,
Providence Railroad,	Providence & Wor. R.R.,
Western Railroad,	Concord R. R.,
Old Colony Railroad,	Fitchburg R. R.,
Schenectady Railroad,	Syracuse and Utica R. R.,
Baltimore & Ohio Road,	Baltimore & Susq. R. R.,
Phila. & Reading Road.	Schuylkill Valley R. R.,
Central (Ga.) Railroad.	Macon and Western R.R.,

New York and Erie Railroad;
and other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents { FAIRBANKS & Co., 81 Water st. N. York.
A. B. NORRIS, 196 Market st., Philad.

April 22, 1848. 1y*17

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston. ja45

RAILROAD IRON.

THE NEW JERSEY IRON CO.'S WORKS, at Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to DUDLEY B. FULLER, Ag't
139 Greenwich Street.

New York, October 25, 1848. tf

CHILLED RAILROAD WHEELS.—THE undersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of Spokes or Disks, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St. below 13th,
Nov. 10, 1847. [tf.] Philadelphia, Penna.

THE SUBSCRIber has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY.
West Troy, May 12, 1847. 1y*21

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent*

Spikes are kept for sale, at Factory Prices, by & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Jarviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand.

ja45

TO LOCOMOTIVE AND MARINE ENgine Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia. 1tf

CHILLED RAILROAD WHEELS.—THE undersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS.
Point Pleasant Foundry,

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co., March 12, 1848. 11tf

NORWICH CAR FACTORY,
NORWICH, CONNECTICUT.

AT the head of navigation on the River *Thames*, and on the line of the *Norwich and Worcester Railroad*, established for the manufactory of

RAILROAD CARS,

OF EVERY DESCRIPTION, VIZ:

PASSENGER, FREIGHT AND HAND CARS,

ALSO, VARIOUS KINDS OF

ENGINE TENDERS AND SNOW PLOUGHS.

TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

☞ Any communication addressed to

JAMES D. MOWRY,
General Agent,
Norwich, Conn.,

Will meet with immediate attention. 1y6

MANUFACTURE OF PATENT WIRE Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by

JOHN A. ROEBLING, *Civil Engineer,*
Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 92v1 1y

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee

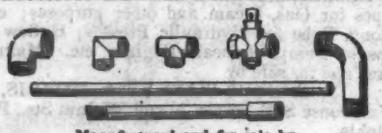
G. A. NICOLLS,
Reading, Pa.
ja45

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by

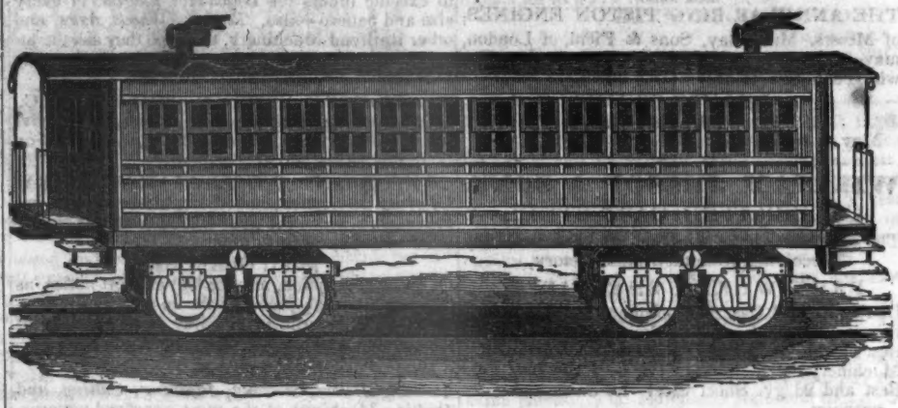
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

LAWRENCE'S ROSENDALE HYDRAULIC CEMENT. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paper-ca barrels, by JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

DAVENPORT & BRIDGES'
CAR WORKS, CAMBRIDGEPORT, MASS.



Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes. 10tf

THE SUBSCRIBERS ARE PREPARED TO execute orders at their Phœnix Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported.

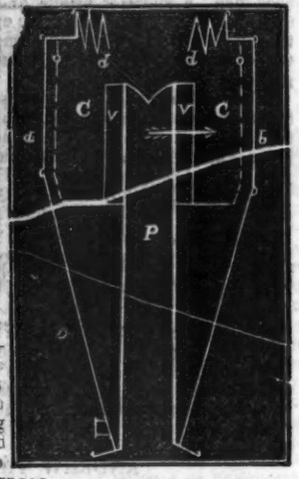
REEVES, BUCK & CO.,
Philadelphia.
ROBERT NICHOLS, Agent,
26tf No 79 Water St., New York.

RAILROAD IRON, PIG IRON, ETC.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ½ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartshrorie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia*

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.



Our improved Spark Arresters have been extensively used during the last year on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city, will be promptly executed.

FRENCH & BAIRD.

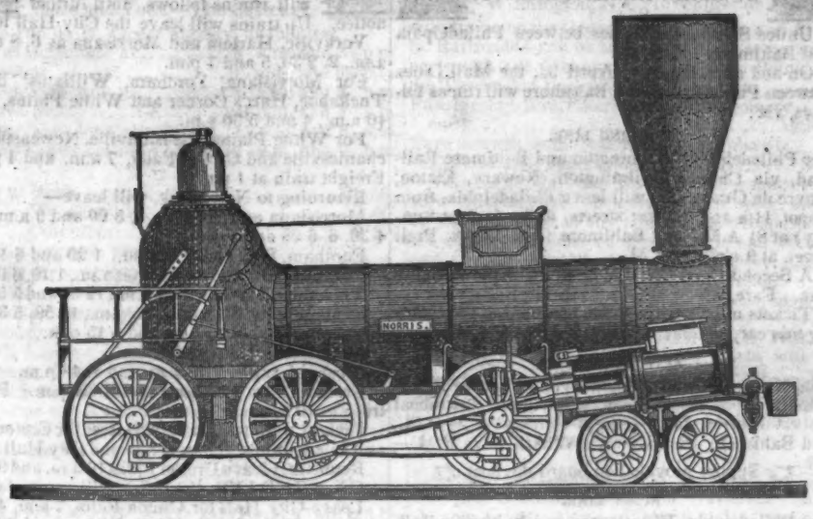
N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

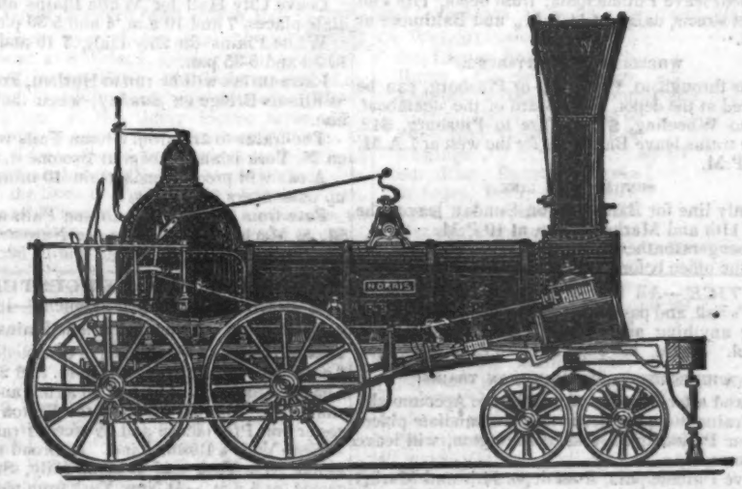
Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Paterson, N. J., or 60 Wall street, N. York.

PIG AND BLOOM IRON.—THE SUBSCRIbers are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniatta Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
12tf Vine St. Wharf, Philadelphia.

T. & C. WASON, Manufacturers of every style of Freight and Baggage Cars.—Forty rods east of the depot, Springfield, Mass.

Running parts in sets complete, Wheels, Axles, or any part of cars furnished and fitted up at short notice and in the best manner.

N.B. Particular attention paid to the manufacture of the *most improved* Freight Cars. We refer to the New Haven, Hartford and Springfield; Connecticut River; Harlem; Housatonic, and Western, Mass., Railroads, where our cars are now in constant use.

Dec.25,1847.—1y.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1¼ to 6 inches in width, and of any thickness required; large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent*,
1y Albany Iron and Nail Works,

IMPORTANT TO ENGINEERS, CONtractors, and Surveyors.—The Engineer's, Contractor's and Surveyor's Pocket Table Book, by J. M. Scribner, A. M., 264 pages, 24 mo; tuck binding, with gilt edge. Published by Huntington & Savage, 216 Pearl street, New York.

The above work comprises Logarithms of Numbers, Logarithmic Sines and Tangents, Natural Sines and Natural Tangents; the Traverse Table, and a full and extensive set of tables, *exhibiting at one view the number of cubic yards contained in any embankment or cutting, and for any base or slope of sides usual in practice.* Besides these essential tables, the work comprises 50 pages more of Mensuration, Tables, Weights of Iron, Strength of Materials, Formulas, Diagrams, etc., for laying out railroads, canals and curves; much of which has never before been offered to the public, and all dispensable to the engineer. This book will prove a great saving of time, and will enable the new beginner to furnish results as accurately (and with much greater rapidity) as the most experienced in the profession without its aid. The tables of Logarithms, etc., have been carefully corrected and compared with *different* editions of the same tables; and *all* the tables throughout the book have been read carefully by proofs four times; hence the most implicit confidence may be placed in their correctness.

Also, *Scribner's Engineer's and Mechanic's Companion*, new edition, 264 pages, enlarged, with 35 pages of entirely new matter, and much improved throughout.

It is believed these books are so well adapted to suit the above professions, that they cannot *afford* to do without them, and that they will aid in rewarding well directed mental labor.

Both are for sale by all the principal booksellers throughout the United States and Canada.

WESTERN RAILROAD.—ON AND AFter Monday, April 5, 1847, the passenger

trains will leave daily, Sun-

days excepted, as follows:

Boston at 8 a. m. and 4 p. m. for Albany.

Albany at 7 1-4 a. m. and 5 p. m. for Boston.

Springfield at 8 1-2 a. m. and 1 p. m. for Albany

Springfield at 8 1-2 a. m. and 1 1-2 and 3 p. m. (or on arrival of the train from New York) for Boston.

Day line to New York, via Springfield.—The steamboat train leaves Boston at 6 a. m., and arrives in New York at 7 p. m., by the steamboats Traveller, New York, or Champion. Returning, leaves New York at 6 1-4 a. m., and arrives in Boston at 7 p. m.

Night line to New York.—Leaves Boston at m., and arrives in New York at 5 a. m.

Albany and Troy.—Leave Boston at 8 a. m., Springfield at 1 p. m., and arrive in Albany at 6 p. m.; or, leave Boston at 4 p.m., Springfield next morning at 8 1-2, and arrive in Albany at 1 1-2 p.m.

The Troy trains connect at Greenbush.

The trains for Buffalo leave at 7½ a.m. and 7 p.m.

For Northampton, Greenfield, etc.—The trains of the Connecticut River Railroad leave Springfield at 8 1-4 a.m., 1 and 3 p.m., and passengers proceed directly on to Brattleboro', Windsor, Bellows Falls, Walpole, Hanover, Haverhill, etc.

For Hartford.—The trains leave Springfield on the arrival of the trains from Boston.

The trains of Pittsfield and North Adams Railroad leave Pittsfield on the arrival of the trains from Boston.

N. B.—No responsibility assumed for any baggage by the passenger trains, except for wearing apparel not exceeding the value of fifty dollars, unless by special agreement.

JAMES BARNES, Sup't and Eng'r.
C A. SEAD, Agent, 27 State street, Boston.

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON, 100 MILES.

This Road in connection with
the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—32 miles from Chattanooga, Tenn.

	RATES OF FREIGHT.	Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot	$0 18	$0 28
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc	0 40	0 65
	Cotton, per 100 lbs	0 45	0 75
	Molasses, per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Sup't. of Transportation.

Augusta, Ga., July 15, 1847. 44*1y

THE WESTERN AND ATLANTIC

Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Rail road.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.

Atlanta, Georgia, April 16th, 1846 1y1

CENTRAL RAILROAD—FROM SAVANnah to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and
Freight. Rates of Passage, $8 00. Freight—

On weight goods generally	50 cts. per hundred.
On measurement goods	13 cts. per cubic ft.
On brls. wet (except molasses and oil)	$1 50 per barrel.
On brls. dry (except lime)	80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery	40 cts. per hundred
On hhds. and pipes of liquor, not over 120 gallons	$5 00 per hhd.
On molasses and oil	$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission. THOMAS PURSE,
y40 Gen'l. Sup't. Transportation.

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1848.

SUMMER ARRANGEMENT.

United States Mail Lines between Philadelphia and Baltimore. Fare, $3.

On and after Monday, April 3d, the Mail Lines between Philadelphia and Baltimore will run as follows, viz:

MORNING LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, via Chester, Wilmington, Newark, Elkton, Havre de Grace, etc., will leave Philadelphia, from Depot, 11th and Market streets, daily (except Sunday) at 8½ A.M., and Baltimore from Depot, Pratt street, at 9 o'clock, A.M.

A Second Class Car will be run with the morning line. Fare, $2.

Tickets must positively be procured at the Office for this car, as none will be sold by the conductors.

AFTERNOON LINE.

Via Newcastle and Frenchtown, will leave Philadelphia, from Dock Street Wharf, per Steamboat Robert Morris, daily (except Sunday) at 2½ P.M., and Baltimore, from Bowly's Wharf, at 2½ P.M.—

☞ Supper provided on board the boat. ☜

NIGHT LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, will leave Philadelphia, from depot, 11th and Market streets, daily, at 11 P.M., and Baltimore at 8 P.M.

WHEELING AND PITTSBURG.

Tickets through to Wheeling or Pittsburg, can be procured at the depot, or on board of the steamboat. Fare to Wheeling, $13. Fare to Pittsburg, $12.

The trains leave Baltimore for the west at 7 A.M. and 4 P.M.

SUNDAY MAIL LINE.

The only line for Baltimore on Sunday leaves the depot, 11th and Market streets, at 10 P.M.

Passengers for these lines must procure their Tickets at the office before taking their seats in the cars.

NOTICE.—All Baggage by these lines is at its owner's risk, and passengers are expressly prohibited taking anything as baggage, except their wearing apparel. 50 lbs. baggage allowed each passenger.

WILMINGTON ACCOMMODATION TRAINS.

On and after Monday, April 3d, the Accommodation Trains, stopping at all the intermndiate places between Philadelphia and Wilmington, will leave as follows, viz:

Leave Philadelphia, from depot 11th and Market streets, daily (Sundays excepted) at 1½ and 4 P. M.

Leave Wilmington, from the depot, Water street, daily (except Sunday) at 7½ A.M. and 4½ P.M.

The Freight Accommodation Train will leave Philadelphia at 7 P.M. and Wilmington at 7 P.M.

The Mail Trains stopping at Chester and Wilminton, leave Philadelphia at 8½ A.M. and 10 P.M. Wilmington at 1 o'clock, P.M., and 12 midnight. Fare to Wilmington, 50 cts. Fare to Chester, 25 cts.

G. H. HUDDELL, *Agent.*

March 23, 1848. 1y15

BOSTON AND PROVIDENCE RAILroad. On and after Monday, October 2d, the

Trains will run as follows:

Steamboat Train—Leaves Boston at 5 p.m.—Leaves Providence, on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 a.m. and 3½ p.m. Leave Providence at 8½ a.m. and 3½ p.m.

Dedham Trains—Leave Boston at 9 a.m., 12 m., 3, 6, and 10½ p.m. Leave Dedham at 7½ 10½ a.m., 1½, 4½, and 9 p.m.

Stoughton Trains—Leave Boston at 11½ a.m. and 4½ p.m. Leave Stoughton at 8½ a.m. and 2½ p.m.

Freight Trains—Leave Boston at 11 a.m. and 6 p.m. Leave Providence at 4 a.m, and 7 40 a.m.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 a.m., 12 m., 3, 5½ and 10½ p.m. Leave Dedham at 8 10½, a.m., 1½, 4½ and 9 p.m.

WM. RAYMOND LEE, *Sup't.*

NEW YORK & HARLEM RAILROAD

CO.—Summer Arrangement.—On and after
Tuesday, June 1st, 1847, the cars
will run as follows, until further notice. Up trains will leave the City Hall for—

Yorkville, Harlem and Morrisana at 6, 8 and 11 a.m., 2, 2 30, 5 and 7 p.m.

For Morrisiana, Fordham, Williams' Bridge, Tuckahoe, Hart's Corner and White Plains, 7 and 10 a.m., 4 and 5 30 p.m.

For White Plains, Pleasantville, Newcastle, Mechanicsville and Croton Falls, 7 a.m. and 4 p.m. Freight train at 1 p.m.

Returning to New York, will leave—

Morrisiana and Harlem, 7, 8 20 and 9 a.m., 1, 3, 4 30, 6, 6 28 and 8 p.m.

Fordham, 8 08 and 9 15 a.m., 1 20 and 6 15 p.m.

Williams Bridge, 8 and 9 08 a.m., 1 10, 6 08 p.m.

Tuckahoe, 7 38 and 8 25 a.m., 12 55 and 5 52 p.m.

White Plains, 7 10 and 8 35 a.m., 12 50, 5 35 p.m.

Pleasantville, 8 15 a.m. and 5 15 p.m.

Newcastle, 8 a.m. and 5 p.m.

Mechanicsville, 7 48 a.m. and 4. 48 p.m.

Croton Falls, 7 30 a.m. and 4 30 p.m. Freight train at 10 a.m.

Freight train will leave 32d street for Croton Falls and intermediate places, 4 a.m and City Hall 1 p.m.

Returning, leave Croton Falls 10 a.m. and 9½ p.m.

ON SUNDAYS, the trains will run as follows:

Leave City Hall for Croton Falls, 7 a.m, 4 p.m.

Croton Falls for City Hall, 7 30 a.m., 4 30 p.m.

Leave City Hall for White Plains and intermediate places, 7 and 10 a.m. 4 and 5 30 p.m.

White Plains for City Hall, 7 10 and 8 35 a.m., 12 30 and 5 35 p.m.

Extra trains will be run to Harlem, Fordham and Williams Bridge on Sunday, when the weather is fine.

The trains to and from Croton Falls will not stop on N. York island, except at Broome st. and 32d st.

A car will preceed each train 10 minutes to take up passengers in the city.

Fare from New York to Croton Falls and Somers $1, to Mechanicsville 87½c., to Newcastle 75c., to Pleasantville 62½c. to White Plains 50c. 25tf

NORWICH AND WORCESTER RAILRoad. Winter Arrangement.—1848.

Accommodation Trains
daily, (Sundays excepted.) Leave Norwich, at 6 a. m., 12 m. and 2½ p. m. Leave Worcester, at 6½ and 10 a. m., and 4½ p. m. connecting with the trains of the Boston and Worcester and Providence and Worcester railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston, daily, Sundays excepted, at 5 p.m.—At New York from pier No. 1 N. River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ a. m., from Norwich at 7 a.m.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y S. H. P. LEE, Jr., Sup't.

BOSTON AND MAINE RAILROAD.

Winter Arrangement.
Commencing Nov. 13, 1848.

Trains leave Boston as follows, viz: For Portland at 7 A.M. and 2½ P.M.

Great Falls at 7 a.m., 2½ and 3½ p.m.

Haverhill at 7 and 11½ a.m., 2½, 3½ and 5 p.m.

Lawrence, at 7, 9, 11½ a.m., 2½, 3½, 5, 6 p.m.

Reading 7, 9 & 11½ a.m., 2½, 3½, 5, 6, 7½ & 10 p.m

Trains leave for Boston as follows, viz: From Portland at 7½ a.m., and 3 p.m.

Great Falls at 6½ and 9½ a.m., and 4½ p.m.

Haverhill at 7, 8½ and 11 a.m., 3 and 6½ p.m.

Lawrence at 6½, 7½, 8½, 11½ a.m., 12½, 3½, 6½, p.m.

Reading at 6½, 7, 7½, 9½, 11½ a.m., 1½, 3½, 7½, 9, p.m.

MEDFORD BRANCH TRAINS.

From Medford at 6½, 8, 10½, a.m., 2, 4, 6, 9 p.m.

From Boston at 7½, 9½ a. m., 12½ 2½, 5½, 6½, 10 p.m.

The Depot in Boston is on Haymarket Square.

CHAS. MINOT, *Super't.*

Boston, Nov. 7, 1848.

BALTIMORE AND SUSQUEHANNA Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at.....9 a.m. and 3½ p.m.
Arrives at.....9 a.m. and 6½ p.m.
Leaves York at.....5 a.m. and 3 p.m.
Arrives at.....12½ p.m. and 8 p.m.
Leaves York for Columbia at..1½ p.m. and 8 a.m.
Leaves Columbia for York at..8 a.m. and 2 p.m.

FARE.

Fare to York.....$1 50
" Wrightsville..... 2 00
" Columbia..... 2 12½
Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg.....$9
Or via Lancaster by railroad..... 10
Through tickets to Harrisburg or Gettysburg.. 3
In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at.....5½ p.m.
Returning, leaves Owing's Mills at.....7 a.m.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry — with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 32 hours Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

NEW YORK & PHILADELPHIA.

NEW JERSEY RAILROAD & TRANSPORTATION CO.—

6 O'CLOCK, A. M.

Accommodation Line from New York to Philadelphia, via Jersey City, New Brunswick, and Camden.

Fare for 1st class cars, $3; for 2d class, $2 50; children under 12 years, half price.

Leaving every morning, (Sundays excepted) at 6 o'clock, from foot of Courtlandt street, and passing through Newark, Elizabethtown, Rahway, New Brunswick, Kingston, Princeton, Trenton, Bordentown, Burlington and Camden, and arriving at Philadelphia at 11½ A. M.

Leave New York 6 o'clock A. M.; Newark, 6h. 30m.; Elizabethtown 6h. 40m.; Rahway, 7 A. M.

DAILY EXCURSION TO PHILADELPHIA.

Excursion Tickets will be furnished, entitling the passengers to return by the 4½ o'clock P. M. Mail Line the same day, or next morning by the 6 o'clock A. M. Mail Line, for FIVE DOLLARS.

RAILROAD IRON—2500 TONS HEAVY RH Rail, now landing, and expected shortly to arrive, for sale on most favorable terms by

DAVIS BROOKS & CO.
July 19th, tf 68 Broad street, New York.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily.....$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia..... 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

t25 JOHN KING, Jr, *Agent.*

CENTRAL AND MACON AND WESTern Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlaniic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20 pr. 100 lbs.	35
Crockery, per cubic foot	0 15 " "	35
Molasses and Oil, per hhd., (smaller casks in proportion).	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price, Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for

1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25 and	1·90
" Pottsville "	34	1·40 and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

NEW YORK ANDERIE RAILROAD LINE. SUMMER ARRANGEMENT. For passengers, twice each way daily, (except Sunday,) leave New York from the foot of Duane St. at 7 o'clock, A. M. and at 4 o'clock, P. M. by steamboat, for Piermont, thence by cars to Ramapo, Monroe, Chester, Goshen, Middletown, Otisville, and the intermediate stations.

The return trains for New York will leave Otisville at 6 30, A. M. and 4 15, P. M.; Middletown at 7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and 5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M.

Fare between New York and Otisville, $1 50; way-fare in proportion.

FOR MILK—Leave Otisville at 5½ o'clock, morning and evening.

FOR FREIGHT—The barges "Samuel Marsh and "Henry Suydam, Jr." will leave New York (from the foot of Duane St.) at 5 o'clock, P. M. daily (except Sundays.)

No freight will be received in New York after 5 o'clock, P. M.

Freight for New York will be taken by the trains eaving Otisville at 10½ o'clock, A. M.; Middletown at 11½, A. M.; Goshen at 12½, P. M.; Chester at 1 o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARKSON, Agent, corner of Duane and West Sts., New York, or to S. S. POST, Superintendent Transportation, Piermont.

24tf H. C. SEYMOUR, Sup't.

LITTLE MIAMI RAILROAD COMPANY. Fall and Winter Arrangement, 1847. On and after Monday, September 20th, until further notice, a Passenger train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield. Returning, will leave Springfield at 4½ a.m. Upward train arrives at Springfield at 2½ p.m. Downward train arrives at Cincinnati at 10½ a.m.

Freight trains will run each way daily.

Messrs. Neil, Moore & Co. are running the following stage lines in connection with the road:

A daily line from Xenia to Columbus and Wheeling, carrying the great Eastern mail.

Daily lines from Springfield to Columbus, Zanesville and Wheeling. Also to Urbana and Bellefontaine.

A line of Hacks runs daily in connection with the train between Deerfield and Lebanon.

Passengers leaving for New York and Boston, arrive at Sandusky city via Urbana, Bellefontaine & the Mad River and Lake Erie railroad, in 27 hours, including several hours' sleep at Bellefontaine. To the same point via Columbus, Delaware, Mansfield and the Mansfield and Sandusky city railroad, is 32 hours. Distance from Cincinnati to Springfield by railroad.....84 miles.

From Springfield to Bellefontaine by stage, over a good Summer road.....32 "
From Bellefontaine to Sandusky city by railroad.....102 "

FARE—From Cincinnati to Lebanon....$1 00
" " " Xenia..... 1 50
" " " Springfield.. 2 00
" " " Columbus... 4 00
" " " Sundusky city 7 00

The Passenger trains runs in connection with Strader & Gorman's line of Mail Packets to Louisville.

Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company; on East Front street.

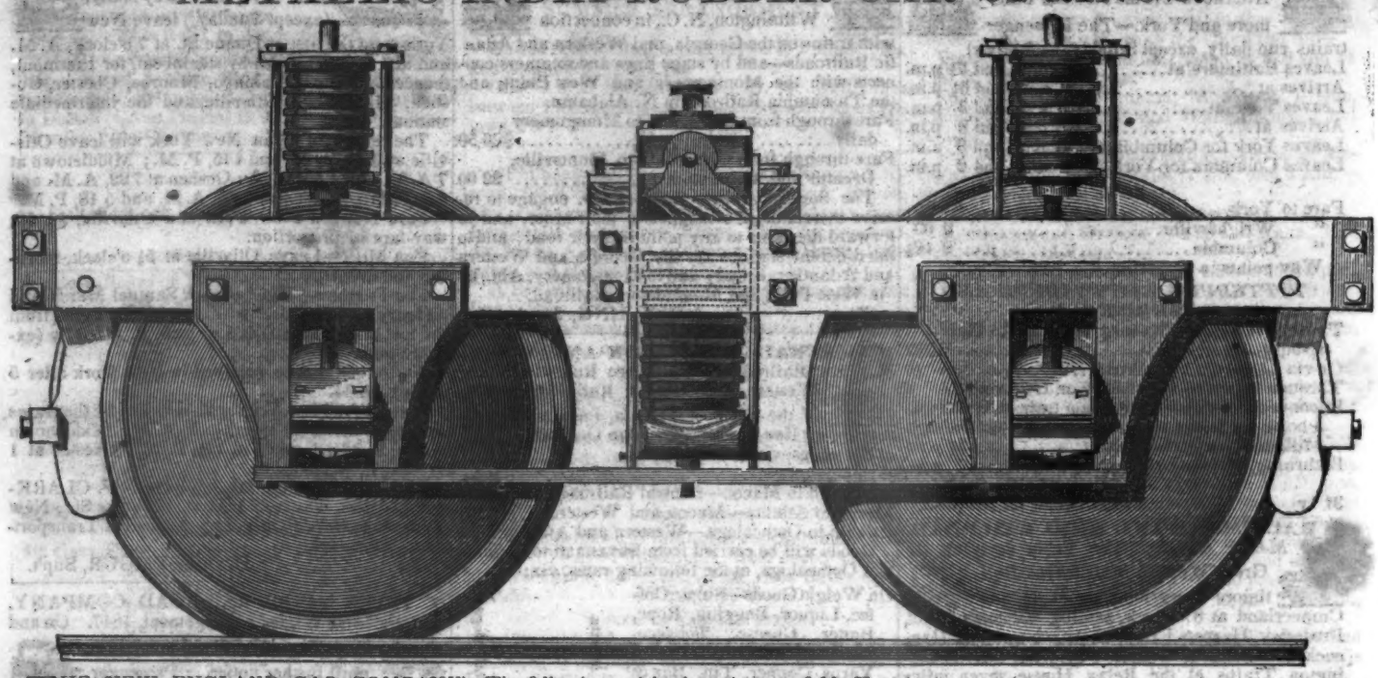
Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for oaggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freigat paid at of a passage for every $500 in value over that amount.

47tf W. H. CLEMENT, *Sup't.*

FOWLER M. RAY'S

METALLIC INDIA RUBBER CAR SPRINGS.



THE NEW ENGLAND CAR COMPANY have introduced these Springs, and they are now in operation on every Railroad terminating in Boston, and several others in New England and the Middle States. Their qualities are well understood, or may be readily ascertained by every person interested to know them. They require no recommendation from the Company. The only known compound of India Rubber good for anything for this purpose is the Vulcanized India Rubber, invented by Charles Goodyear, of New Haven, and the application of it, and the form in which it is used, were invented by F. M. Ray, of New York. The right to manufacture and sell the substance itself for the purpose of Railroad Carriage Springs, as well as the form and application of it, are held exclusively by the New England Car Company. No other company, or individual, has any right to sell or use it for such purpose, or has attempted so to use it in this country.

The New England Car Company guarantee the right to use the article they sell for Railroad Carriage Springs only, against all adverse rights, whether under patents or otherwise: and all persons and corporations are cautioned against a similar use of the article, when purchased of any other parties.

The Springs they sell are all manufactured in a uniform manner, and under the immediate inspection of their own Agent, and have been proved and known to answer the purpose. None have been manufactured in this country or imported from abroad beside their own, which would at all answer the purpose; and if any such should be produced, it cannot be used for Car Springs, while Goodyear's patents, and the rights of the New England Car Company under them, remain in force.

The New England Car Company are now prepared to answer orders for all that may be called for, on reasonable notice, and uniform and equitable terms. They invite the most careful examination, and the *severest scrutiny*, into the merits of their Springs, wherever they have applied them. And if after such examination, your Company should judge it for their interest to adopt them, the N. E. Car Company would respectfully invite the patronage which they think they deserve, and are confident of receiving at your hands.

EDWARD CRANE, *Agent*,
Office 99 State street.

Orders may also be left with WM. RIDER & BROTHERS, No. 58 Liberty street, New York, or with F. M. RAY, *Agent*,
100 Broadway, N. Y.

The following article, from the pen of Mr HALE, the president of the Boston and Worcester railroad, expresses his opinion of this important improvement, as published in the Boston Daily Advertiser of June 7, 1848. He says:

"Of the numerous uses to which the wonderful elasticity and durability of India Rubber renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used, not only for the springs on which the car rests, but for the springs attached to the draw bar at each end of the car, to prevent any jar on the sudden advancement or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn, that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring which we have ever seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months, in which we have seen the springs in operation, there is no apparent wear or diminution of their efficiency."

The above statement of Mr. Hale agrees with my own observation in all particulars.

WM. PARKER, Supt. B. & W. R. R.
June 8, 1848.

I fully concur in the foregoing statement, from practical observation on its use for the last 5 months, on the Boston and Worcester railroad corporation cars.

D. N. PICKERING, Jr.,
Supt. Car Building B. &. W. R. R.
Boston, June 10, 1848.

The New England Car Company have introduced their Vulcanized India Rubber Car Springs on the roads with which we are respectively connected, and we fully concur with Mr. Hale in the above opinion of their character and properties.

DAVENPORT & BRIDGES, Car Builders.
BRADLEY & RICE, Car Builders.
Boston, June, 1848.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.
JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom. 28tf

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AMERICAN RAILROAD JOURNAL.
OFFICE AT 48 SOUTH THIRD STREET,
(Below Chestnut Street,)
PHILADELPHIA, PA.

This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

TERMS.—Five Dollars a year, *in advance*.

RATES OF ADVERTISING.

One page per annum	$125 00
One column "	50 00
One square "	15 00
One page per month	20 00
One column "	8 00
One square "	2 50
One page, single insertion	8 00
One columnn " "	3 00
One square " "	1 00
Professional notices per annum	5

☞ LETTERS and COMMUNICATIONS for this Journal may be directed to the *Editor*,
D. K. MINOR.